

Beginning in this Issue ... A Course On Airplane Designing For Model Makers

December

MODEL AIRPLANE NEWS



HOW TO BUILD -

A three-foot flying scale model of the

A thrilling air-mail story entitled
Eagle Jim's Kid



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Wing Span 36"



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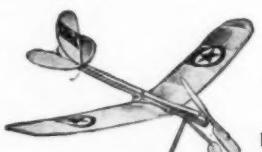
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Curtiss Ace	28"	.40
Bremen	36"	.50
Bellanca	39"	.50
Ryan "Spirit"	39¼"	.50
Stinson Bi-plane	38¾"	.60



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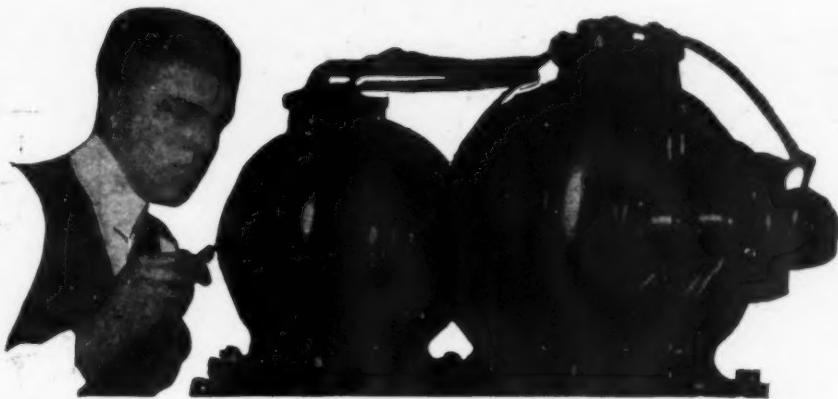
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Illustrations are actual photos of Models built from SELLEY CHAMPION KITS





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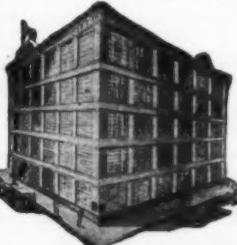
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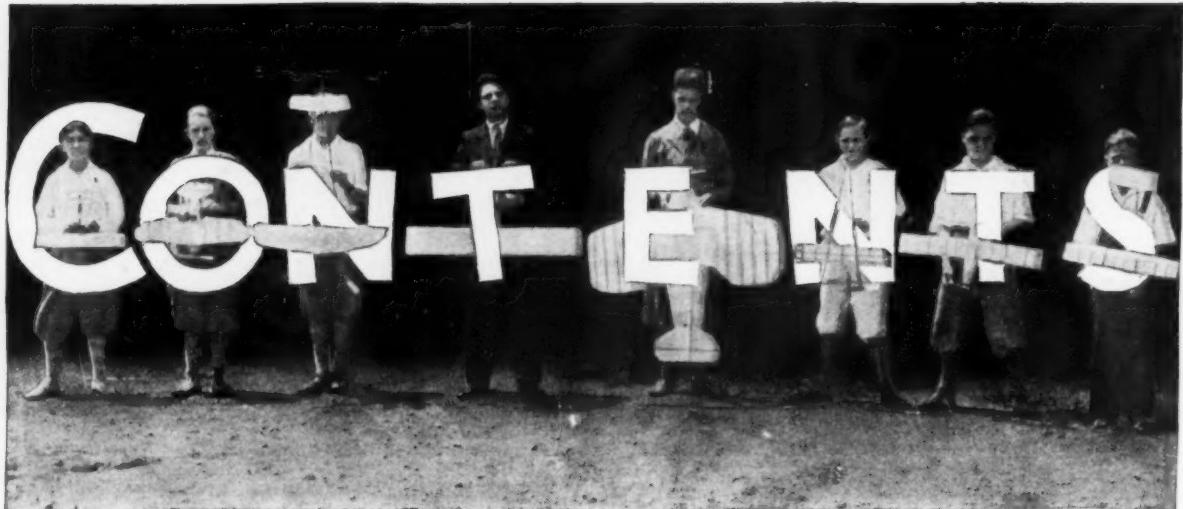
Without obligation send me your big free catalog and all details of Railroad Fare to Chicago, Free Employment Service, Radio, Aviation Electricity, and Automotive Courses, and how I can "earn while learning."

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"THE AIR GOIN' NAVY," — *a Wonderful Story of Uncle Sam's Silent Flyers*
By Lieut. H. B. Miller

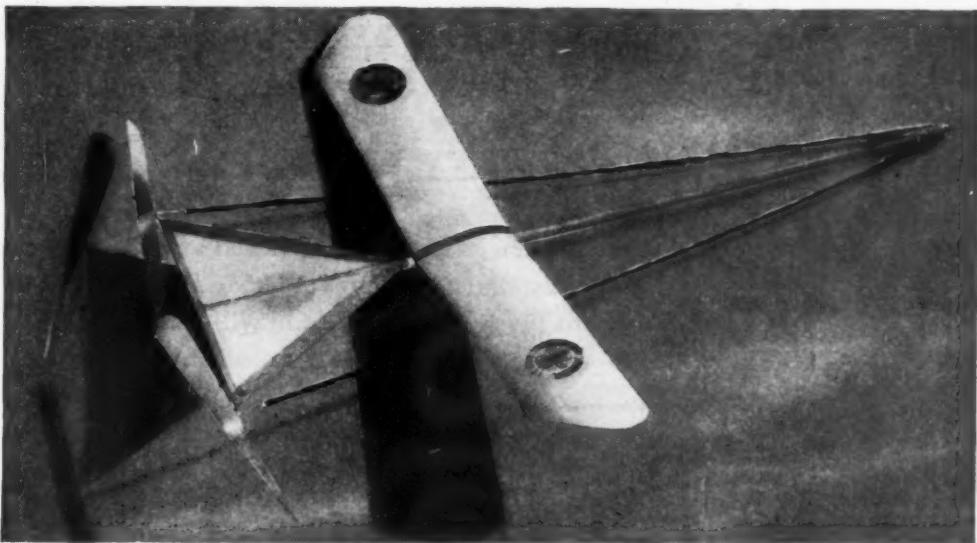
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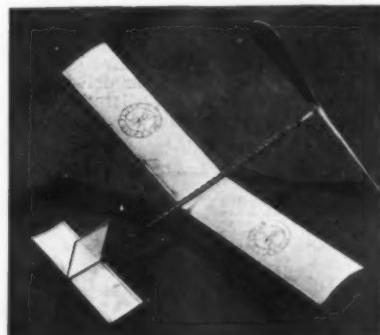
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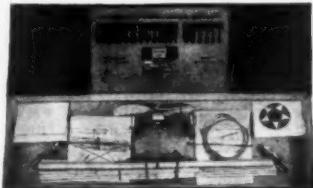
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Featherweight Construction Means Flights of Hundreds of Feet

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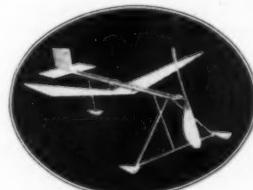
40-inch contest type flier using Champion's new endurance rubber thread motor, special high lift wing curves and refined construction details. Featherweight balsa produces a model that floats on air with slow turning props which spiral the plane to great heights and long flights. Well packed in stout mailing tube, complete with all materials, blue prints, directions, postpaid. Canada \$3.30, postpaid U. S. . .

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32 —Page Illustrated Catalog

Free with order. Shows exclusive new line of scale models and prize winning contest kits using latest aerodynamic principles and scientific construction methods —just like real airplanes. Catalog alone 10c.

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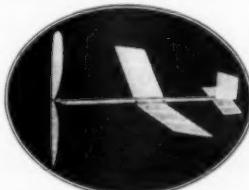


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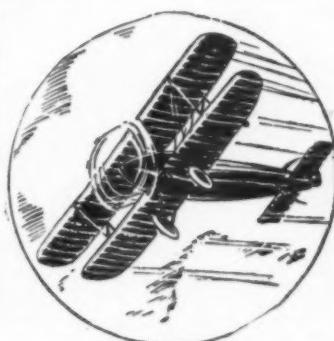
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\$5

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in time for Christmas delivery. All kits guaranteed to satisfy, or for any reason may be returned and your money refunded.
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Gentlemen: I enclose \$_____, for which send me, right away, Model Kits I have checked below:

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 Hydroplane \$1 Curtiss Hawk \$5
 Catalog 10c

Name_____

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Please write plainly.

Guaranteed to Fly—or Money Back

**Eight Minutes
and the
Mail Must Go!
His Father, the Mail
Pilot, Lay Helpless,
So, for the Sake
of the
Famous Tradition,**

Dale—

DALE LIVENGOOD, dressed in flying togs exactly like those worn by his father, except that Dale's were not quite so large, entered the living room of the Livengood home. Dale was going to the flying field to drive the car home after watching his father take off for Omaha with the air mail. Dale's father was "Eagle Jim" Livengood, World War ace and veteran air-mail pilot. The door of the bedroom stood partly open and Dale could hear his father bustling about as he got into his flying gear.

"Dad, please let me ride with you this trip," begged Dale, raising his voice to be sure his father could hear.

"It's too late for me to get permission to take you if I wanted to, Son," answered "Eagle Jim." "And I don't want to take you this time anyhow. You went two weeks ago."

Dale's face clouded, but he said no more. His mother, sitting by the window with some fancy work, flashed him an understanding smile. She knew how her sixteen-year-old son longed for the time to come when he would be a pilot like his adored father. Since "Eagle Jim" had come home from France when Dale was six years old, the lad had known but one ambition. He wanted to be a flyer. The basement was full of model planes he had built. A number of these would actually take off for short flights, being powered by the works of old alarm clocks and other curious and original "motors".

Dale read and studied text books incessantly and other flying literature of his father's. He was always plying his father with questions about the air and the craft that navi-



gated it. They were intelligent questions and "Eagle Jim" answered them intelligently and patiently.

The result was that Dale knew the theory of flying better than some aviators who had been flying for months. He could look at a plane passing overhead and tell at a glance its make, style, lifting power, normal speed under load or flying light, and numbers of such things that are a mystery to most grown-ups.

DURING the past three months Dale had made three trips to Omaha with his father. On the last trip "Eagle Jim" had allowed Dale to rest his hands and feet lightly on the controls in the rear cockpit while he operated the ship from the front one. Thus Dale had come to know the "feel" of the controls. Now he was living only for the coming of the day when he would be allowed to make another trip with his father.

As Dale stood brooding over his father's refusal to take him on the present hop, the telephone rang.

"Answer it, Dale," said Mrs. Livengood.

Dale went to the phone, from where he shortly called to his father.

"It's Mr. Burnham, Dad," said the lad. "He's calling from the field. He says he's the only relief pilot out there and he wants to be sure you are

**MONSTER
Curtiss "ROBIN"
Scale-Model
Contest**

—o—

**Handsome Prizes
for Winners!**

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**Be Sure to Get Your
JANUARY
MODEL AIRPLANE
NEWS**

"Eagle Jim's" Kid

By SEVEN ANDERTON



coming to fly the mail so that he can leave to attend to some business."

"Tell him to go ahead, Son," called "Eagle Jim." "We'll leave here in five minutes."

A few moments after Dale turned from the phone, "Eagle Jim" emerged from the bedroom. He was in his flying gear with his helmet stuffed into the pocket of the leather coat. He stooped to kiss Dale's mother.

"Be careful, Jim, dear," said Mrs. Livengood. "I don't know what I'm going to do when Dale becomes a pilot, too, and I have both of you to worry about."

"You mustn't worry, Mother," laughed "Eagle Jim". "It's two years yet before Dale will be old enough to begin trying his wings. By that time I'll be ready to retire and let our husky son support the family."

"I hope so," smiled Dale's mother. "I feel like a barnyard pullet who has mated with one eagle and mothered another. It would be some comfort if my mate would come to rest beside me when my chick takes to the clouds."

"Come on, Son," said "Eagle Jim", turning toward the door after kissing his wife again. "Let's get out to the field."

It was two miles to the field from the Livengood

In terror, Dale turned his head to see another plane swoop past

home. "Eagle Jim" with Dale at his side sent the big car purring along the pavement. The veteran flyer chatted as usual with his son about flying subjects. Then, in a flash, the accident happened.

A big touring car, driven by a drunken man, came plumping from a side street. The intoxicated man at the wheel of the speeding auto did not even blow his horn and "Eagle Jim" saw the danger too late. The touring car crashed into the side of the one in which Dale and his father was riding. The flyer's car was flung across the curb to crash into a trolley pole. There was the sound of breaking glass, rending steel

and splintering wood. Dale felt himself flung against his father as the car that had struck them turned over and came to rest on top of the wreck. Then a crowd began to gather.

Dale, his father, and the driver of the other car were pulled out of the wreckage. Dale was unhurt. The drunken driver was not hurt except for a slightly cut chin, but Dale heard a man kneeling beside "Eagle Jim" say that his father's leg was broken.

Dale uttered a cry of dismay and pushed his way to his father's side. "Eagle Jim's" eyes met those of his son and the veteran pilot tried to smile, but Dale saw how white his face was and how tightly he drew his lips together.

"Are you hurt, Son?" asked "Eagle Jim."

"No, Dad."

"Then get a taxi quick," said his father. "Hurry to the field and tell them I'm hurt and can't take the mail. Don't worry about me. Somebody will take me to a doctor. You know, Son, the mail must go."

"Eagle Jim" had been fumbling in his pocket. As he finished speaking, he pressed his wallet into Dale's hand.

"All right, Dad," said Dale. Then he turned toward a taxi that was halted in the jam of cars caused by the accident.

A moment later the taxi was bearing Dale toward the flying field. He hated to leave his father like that, but "Eagle Jim" had reminded him that the mail must go—and he was "Eagle Jim's" son.

Dale's report threw the handful of men at the flying field office into consternation. There was no other pilot at the field and none to be reached quickly, nor was that all.

DALE gathered from the conversation that the plane bore a heavily insured cargo. Failure of one of the two pouches in the plane to reach its destination on time would bring a ruinous loss to the company.

"Jerusalem!" cried one of the men. "It's ten minutes to takeoff time! If that plane don't get away in time to make connections at Omaha, the boss will have hydrophobia and fire everybody."

"The Lord only knows where we'll get a pilot now," answered another. "Let's pray that those fellows catch somebody by phone quick."

Two men had rushed to telephone in a frantic effort to get a pilot for the emergency run. Dale glanced at his wrist-watch and saw that it was eight minutes to three. The plane should hop off at three and arrive in Omaha at five-fifteen.

Dale walked out where the trim biplane rested, loaded and ready for its pilot. The motor had been warming up for five minutes. Dale walked around in front. The steady, deep-throated bellow of that idling motor was music to his ears. He knew the plane for one of the newest and best in the air-mail service. He had a model of it nearly completed in the workshop at home. Gee, if they'd only let him fly it! He knew he could do it.

For a moment he thought of asking permission to take his father's place in this emergency, but he knew they would refuse. He was too young and—then another idea popped into Dale's head. Why not fly it anyhow?

The mail was strapped in place. The motor was ready. Dale shot a glance at the group in front of the office. Nobody was watching him. As "Eagle Jim's" kid, he had the run of the field.

"Dad said the mail must go," muttered Dale, "and there isn't any one else to take it."

For a moment "Eagle Jim's" son stood irresolute. Then he darted quickly to the side of the gray body of the ship. Two well-directed kicks removed the blocks from under the wheels. A quick tug at the tether and the plane was free. As it began to move slowly forward, Dale scrambled onto a wing and dropped into the front cockpit. He opened her up. There was a roar from the mighty motor and the plane leaped forward like a sprinter at the sound of the starter's gun.

AT that sullen blast from the motor the group in front of the office turned and raced toward the starting plane. They were too late. The ship was already rolling away down the field at a speed far greater than that of a sprinting man.

"It's 'Eagle Jim's' kid," gasped one of the pursuers as they halted in defeat.

"He'll be killed!" cried another.

"Maybe he can't get her up."

Dale, at the controls of the plane, had not even glanced back. He was watching for the line where "Eagle Jim" had told him the plane must take the air in order to safely clear wires and other obstructions at the end of the field. He was almost upon that dead-



line! The roaring motor was pulling the bouncing plane at a terrific speed. There was the line! Dale gave the stick that little steady pull that he knew from much study was the correct way to get the ship off the ground.

"Holy Moses!" cried a watching mechanic. "He picked her up as pretty as 'Eagle Jim' ever did!"

"We'd better call an ambulance," gasped another. "Jim told me just the other day that the kid had never had hold of the controls, except to feel them while Jim handled them."

The color came back to Dale's face as he felt the trim ship riding the air. With the knowledge that he had taken her off successfully, the last little fear ceased to tug at his heart. He had been right. He could fly! With that sublime self-confidence that is the heritage of youth he settled himself at the controls.

He glanced at the compass and swung the craft slightly to the left. He straightened her out with her nose pointed directly toward Omaha. "Eagle Jim" had explained the compass to Dale and Dale had watched it carefully during his three trips to Omaha with his father. He glanced at the altimeter and saw that he was climbing steadily. He would level her off

at 1,500 feet. Gee, this was a cinch! In about two hours he would be in Omaha. The mail was going—and "Eagle Jim's" kid was taking it in!

Joe Penny, "Eagle Jim's" best friend, and Roxy Peters, both mechanics, watched the plane fade from sight with something of consternation etched on their faces. The plane moved as if a veteran were at the controls! As it disappeared, Peters rushed to a telephone to call the landing-field in Omaha and Penny dashed off to the hospital to break the news to "Eagle Jim".

THE mechanic only got to the corridor of the ward where "Eagle Jim" lay. He was stopped by the physician in charge and after a brief conference it was decided that there was nothing to be gained by telling the injured flyer immediately. However, the conversation was overheard by a reporter for an evening paper, who had been rushed to the hospital when word of the flyer's accident got out.

In less time than a half hour an extra was on the street and the people of the city were reading the story of how Dale Livengood, son of "Eagle Jim", was speeding toward Omaha with the mail which an accident had prevented his father from taking. Big black type told how the sixteen-year-old youth had stolen the plane while field attendants were hunting a substitute pilot. It also informed the readers that the boy had never before piloted a plane, even with an instructor. Now he was taking the mail to Omaha!

Barred from the hospital where "Eagle Jim" lay, reporters descended upon the Livengood home. The second extra told how a pale-faced but dry-eyed mother knelt in her home, praying God to watch over her son, and reported that the plane had passed over Jamestown, sixty miles on its way.

(Continued on page 50)

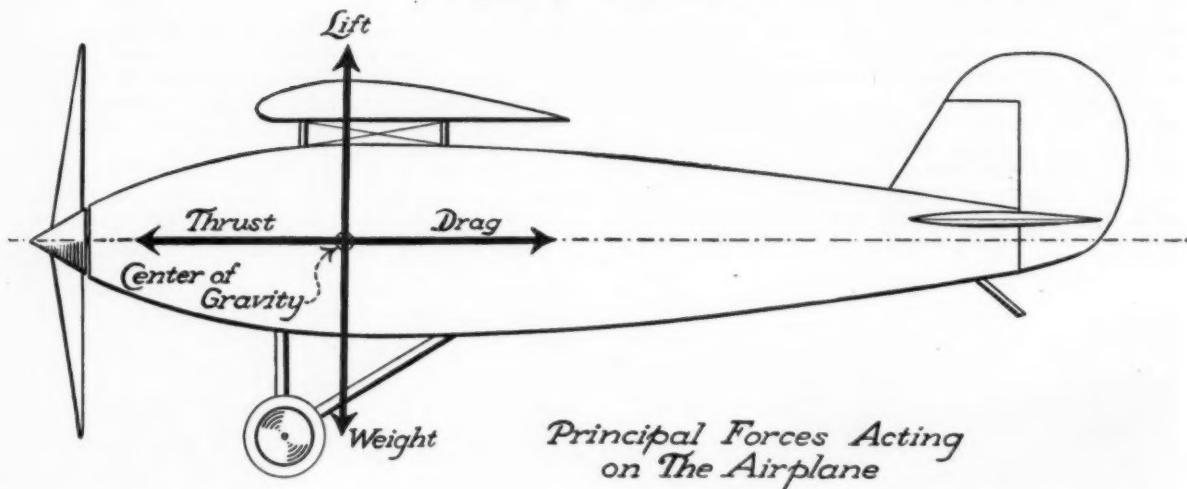


"Get a taxi quick, Son. The mail must go!"

A Course in Airplane Designing

By Mastering This Valuable Course, the Model Builder of Today Lays the Cornerstone for His Career as the Aeronautical Engineer and Designer of Tomorrow

By KEN SINCLAIR



In presenting this course, MODEL AIRPLANE NEWS wishes to stress the fact that model building is more than a mere sport. If the builder of model airplanes learns the fundamental principles underlying airplane flight and designing, he prepares himself for a future career in the most profitable phase of aviation.

The policy of MODEL AIRPLANE NEWS is not to encourage or teach its readers to become pilots but rather to become aeronautical engineers, designers, salesmen, manufacturers, or equip themselves for any other positions which require the training of the specialist or executive. Study this course from month to month, master it in every detail and you will gain a fundamental knowledge of the how and why of airplane design which will be second to none.

THE EDITOR.

AFEW days ago I witnessed a very interesting demonstration given by two supposedly able model builders. They were trying out a new model, a scale reproduction of a Fokker monoplane, powered by the usual rubber motor. The model behaved well for the first portion of the flight; but, as soon as the power was exhausted it stalled, falling to the ground in any position that it happened to choose.

The two modelists argued vainly and at length. One held that the tail surfaces were too large; the other that they were too small. When this line of argument brought no results, the first claimed that the wing was warped; the other claimed that the fuselage was too long.

Nor was this wordy but useless battle an exception.

Why model airplane builders, who exercise so much skill in the construction of their flying models, persist in exhibiting such gross ignorance of the elementary principles of flight has long been a mystery to me. They may know a great deal about the building of a ship—but just what do they know about the reasons

that underlie the basic principles of flight itself. If these model builders would take a little time off and study a few of the underlying principles of flight they would be able to better their distance and endurance records surprisingly. I know that very few of you will ever become airplane designers, but by a study of elementary flight principles you can improve the quality of your work, make your models fly farther, and many of you can design your own planes and make them prove successful!

You may be asking yourself right now just what was wrong with that model mentioned in the first paragraph? Your question could be answered here, but the answer would only lead to confusion until we have a better understanding of our problem.

Airplane design is no hit-or-miss proposition. It is an exact science that can be mastered only gradually, step by step. Fortunately the design of model airplanes is comparatively simple in comparison with the design of the larger machines.

In some ways the model airplane is more delicate to balance than its larger

(Continued on page 43)

How to Build a Loening Amphibian



Here's
Something Worth Building!

A Flying Model of This Famous Air Yacht!

AGREAT number of our readers have been asking why amphibian plans are impossible to obtain. They told us that no manufacturer in the entire country had them—that they were told that amphibian models could not be made to fly—that if built, they would cost too much and a thousand other similar excuses.

That was just the kind of incentive MODEL AIRPLANE News likes, and efforts were made to disprove the pessimists' wails.

It was a job, we admit, but the finished product proves well worth the effort. It will fly—costs no more than the average scale model and looks like the real thing.

In its construction, we found that it was necessary to depart from the exact measurements of the Loening in a few places and add a four-bladed propeller, instead of the three, but apart from these minor changes, it is true to form.

Construction Details of Pontoon or Hull

IN constructing the pontoon take a sheet of $1/16'' \times 6'' \times 36''$ balsa and cut out formers B-1 to B-6 by tracing them from the drawings as shown in drawing 15. All these formers must be shaped to fit drawings, which are full size. The edges are then nicked as shown to fit the connecting spars and cross sections.

The next step is to take your $4'' \times 3'' \times 1''$ and shape

out the "bumper" or front end of the hull of pontoon. The "bumper" AB is then placed into position as shown in drawing 1, with ambroid, notches being cut to fit ends of longerons. Take the $1/8'' \times 1/8'' \times 16 1/4''$ pine strip and put into the proper position along the keel of pontoon as shown in drawing 1. This strip is to be cut to exact size as shown in the measurements in drawings 1, 2 and 3 and should reach from the rear of the "bumper" to the pontoon step, as shown, and then ambroided.

Now take formers B-1 to B-4 and set into their proper places as shown in the drawing. Then take the two spruce strips $1/8'' \times 1/8'' \times 24 3/8''$ and place them in position on the sides of pontoon, making sure that they are cut to size as shown in drawings 1, 2 and 3. They extend from the rear of pontoon bottom to the front of rudder. Formers B-1 to B-4 should have a nick cut into each one, to fit these spars and spruce spars $1/8'' \times 1/8'' \times 8 1/4''$ should run from former B-4 to the rear end of pontoon, being fastened all along the line with ambroid as shown in the drawings. Nos. 3 and 4, $1/32''$ bamboo strings are used to strengthen entire hull as shown in drawings 6 and 7.

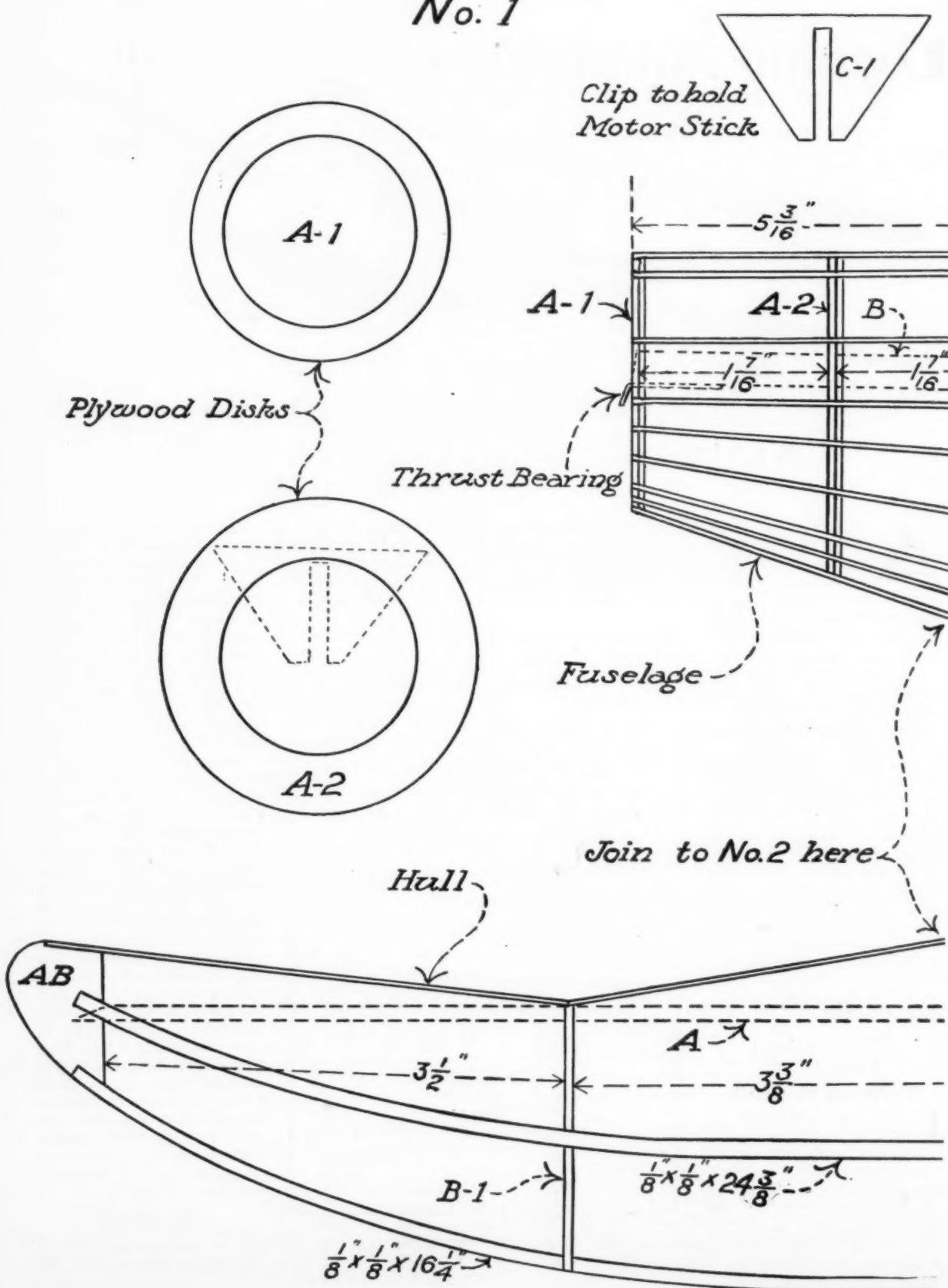
Fuselage

TO construct the fuselage we use another sheet of $1/16'' \times 6'' \times 36''$ balsa and cut out former rings A-1, A-2 and A-3 and formers A-4 to A-9, and shape to size by fittings to drawings 1, 3, 4 and 5. Make two of A-9 as

Necessary Materials

12	spruce pontoon and fuselage longerons	$1/8'' \times 1/8'' \times 20''$
16	spruce wing stringers	$1/8'' \times 1/8'' \times 18''$
2	pine propeller blocks	$1'' \times 3/4'' \times 10''$
3 strips	balsa (struts)	$1/2'' \times 3/8'' \times 36''$
3 sheets	balsa (formers and ribs)	$1/16'' \times 6'' \times 36''$
25 strips	bamboo	
1	pine motor stick	$1/8'' \times 1/4'' \times 22''$
40 feet	No. $2/16''$ rubber	
.3 feet	No. 14 piano wire	
1 pair	2" wheels	
10 sheets	Jap Hackone silk tissue	
12 inches	aluminum tubing, $3/4''$ diameter	
2 cans	2 oz. cement	
2 cans	2 oz. dope	
1 can	2 oz. pontoon finisher	
1	thrust bearing	
1	balsa block	$1'' \times 4'' \times 3''$
1 piece	balsa	$1/8'' \times 1/8'' \times 36''$

No. 1



shown in drawing 6. Former rings A-1, A-2 and A-3 are made two-ply by cutting out two of each and ambroid together with the grain of the wood running crossways. These are shown in drawings 1 and 3. All these formers are made ready to set into place and the two spars $1/8'' \times 1/8''$ are placed on drawings 6, 7, 8 and 9 and shaped. These two spars should be 4" apart at one end and continued this distance apart to the end of the cockpit, being fastened to the formers A-3 and A-5.

The remainder of these spars are formed into a "V" shape as shown in the drawing attached to formers A-6, A-7 and A-8. One former A-9 is ambroided to the two top longerons of pontoon and B-2 in position shown in drawing 6. The other is fastened between bottom edge of A-3 and the two forward uprights between fuselage and pontoon as shown in drawing 2.

The uprights are next placed and ambroided to the grooves provided for them in the formers B-2 and B-5 of the pontoon hull and formers. The "V" form previously described is then set in place on top of the uprights, after which split bamboo stringers are ambroided to same as shown in the drawing.

Former rings A-1, and A-2 and A-3 are then mounted on a bamboo strip $1/16'' \times 5\frac{3}{16}''$ long reaching from the nose of fuselage to the front of the cockpit as shown in drawings 1 and 2. Bamboo stringers are secured with ambroid round these formers to give additional strength as shown on the same drawing.

Wings

THE ribs for the construction of the wings are made from balsa sheet as used for the formers of fuselage and pontoon. There are thirty ribs to be cut, each being 6" in length. Cut these ribs perfectly. Make a tracing of the rib curve as shown in the

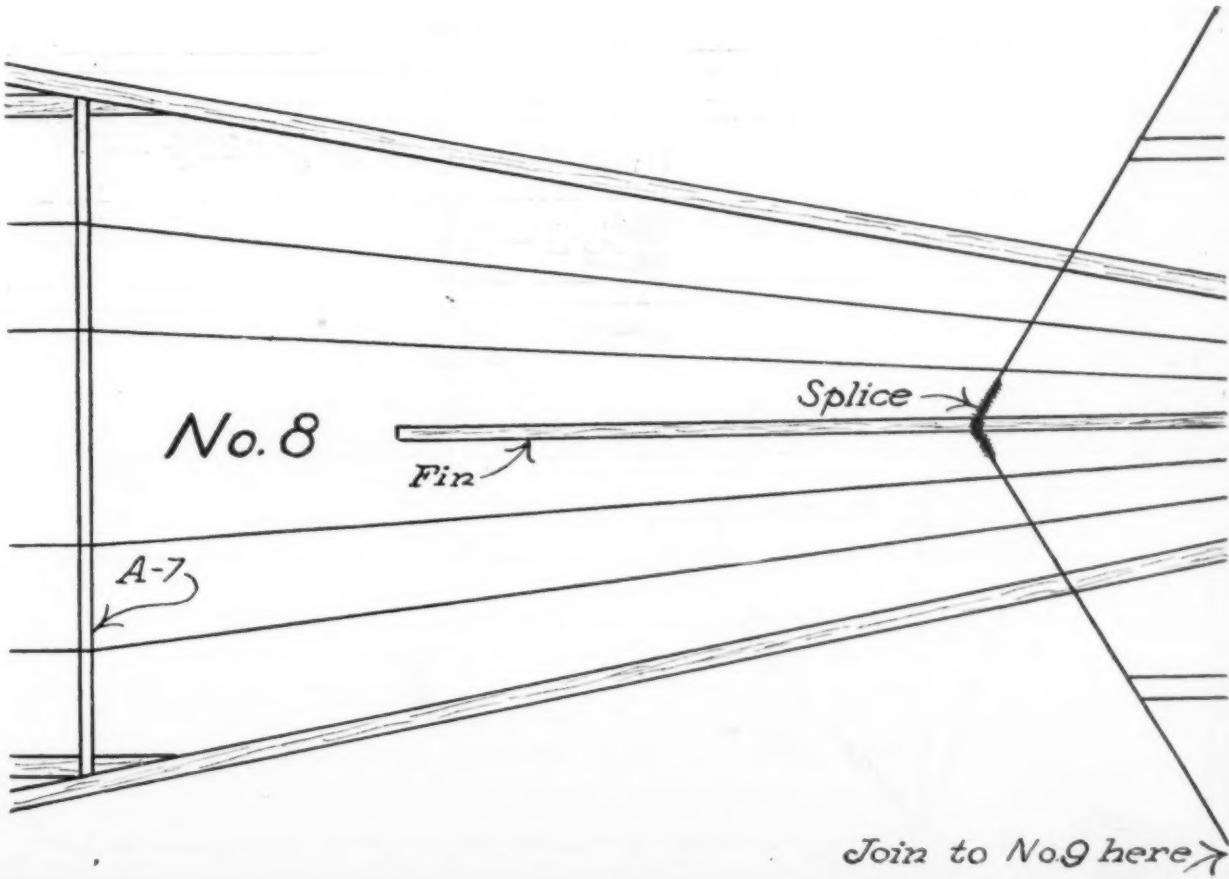
drawing and then by using carbon paper retrace the general outline upon your balsa sheet. These ribs when finished are placed on spars D-3 and D-4, made of $1/8'' \times 1/8'' \times 23''$. Then two spars D-1 and D-2, $1/8'' \times 1/8'' \times 18\frac{7}{16}''$, are placed in grooves situated on top of ribs which are to strengthen the wing section. Then D-5 and D-6, $1/8'' \times 1/16'' \times 18\frac{7}{16}''$, are placed in groove at leading edge and at trailing edge on underside.

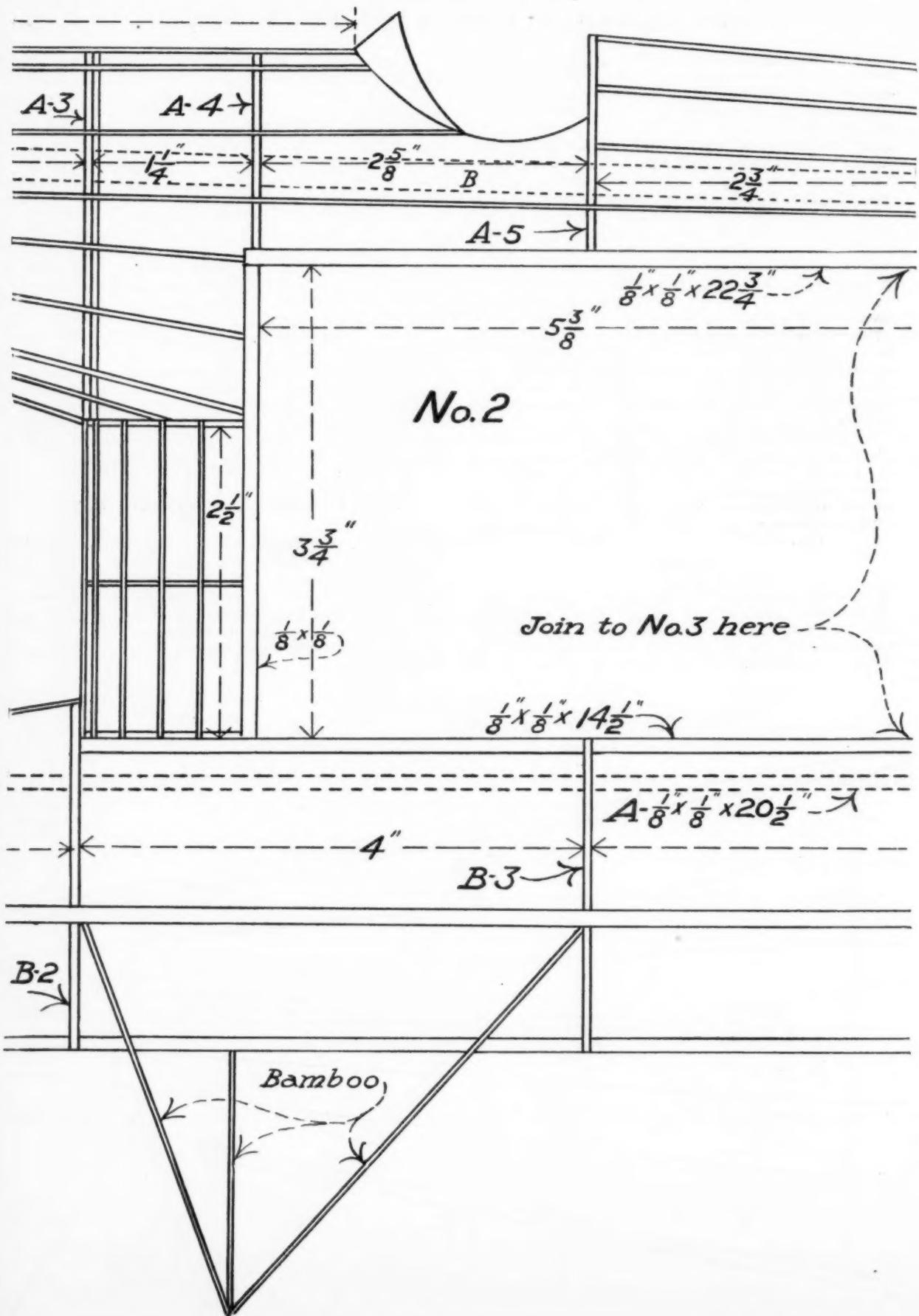
Four tips are then constructed of the balsa wood sheet, which are placed on the wing-tips as shown in drawing 13. The four wing sections are made up in the same way, using plenty of ambroid to make all spars and ribs tight. The wings are then designated as upper and lower right panels and upper and lower left panels. The gap between the upper and lower panels measures exactly 7".

We must also construct the center section for the upper wings, measuring 6" in chord and 4" in width as shown in drawing 14 and constructed in the same way as the wing proper except D-3 and D-4 are omitted. This center section is placed above the fuselage mounted on struts E-4 and E-5 as shown in drawing 18 and wings are joined as in drawing 17. The dihedral of these wings measures 2" above the center of fuselage.

Tail, Rudder, and Vertical Fin

THESE three valuable parts of our ship are made from bamboo which has been split to a $1/32'' \times 1/16'' \times 20''$, (bamboo may be spliced with the aid of cotton thread and ambroid) which we use for the outer edges of all three tail surfaces. Spruce spars $1/16'' \times 1/8''$ are cut to length as shown in drawings 4 and 5 and shaped into place and tightened with ambroid as shown.





Stabilizers and Elevators

THE elevators and stabilizers are constructed of two lengths of split bamboo which are formed to fit the drawings 8, 9, and 10 by heating the bamboo over a lighted candle or an electric bulb. Where these bamboo pieces join, they should be spliced and glued together with the aid of ambroid. Then take the elevators and stabilizers and fix into place on the fuselage with ambroid, setting them aside to dry thoroughly. Fin, rudder, stabilizer and elevators are to be covered both sides with tissue.

Wing Floats

THE wing float as shown is made up from the spruce spar $1/8'' \times 1/8'' \times 36''$ and several pieces of split bamboo which are heated into shape and thoroughly ambroided into place as shown in drawing 16. When float is finished and dry, take your ruler and measure in from the tip of lower wing 6", affixing float struts into place as shown in cut. Two floats are made of this type.

Propeller

THE propeller is carved from $1'' \times 3/4'' \times 9''$ pine blocks as shown in drawing 16. Two propellers of this kind are made and fastened together with ambroid

so that when completed we have a four-bladed propeller. The real Loening, of course, has a three-bladed propeller, but we are using four blades to insure better balance in the model.

Struts

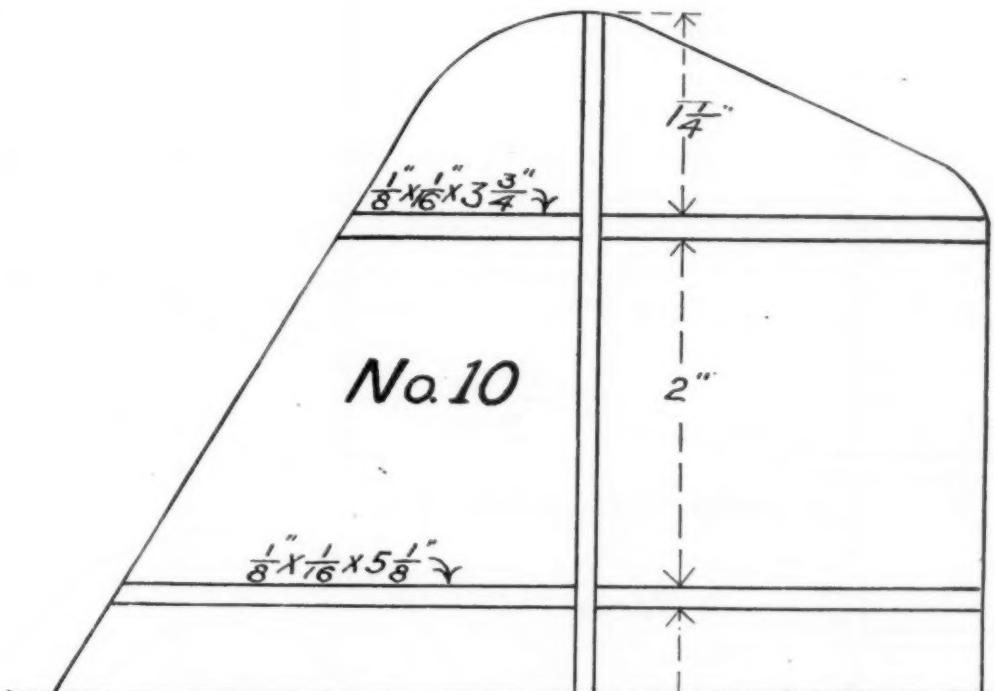
THE struts are made from the three pieces of balsa wood size $3/8'' \times 3/16'' \times 36''$ and are cut to size as shown in drawing 18 and streamlined by sand-papering. Two of E-4 and E-5 and four each of E-1, E-2 and E-3 should be made.

Three struts E-1, E-2 and E-3 are attached between the wings on ribs six inches from tips. These will be directly over wing floats. The other two sets, E-1, E-2 and E-3 are attached to ribs six inches from fuselage.

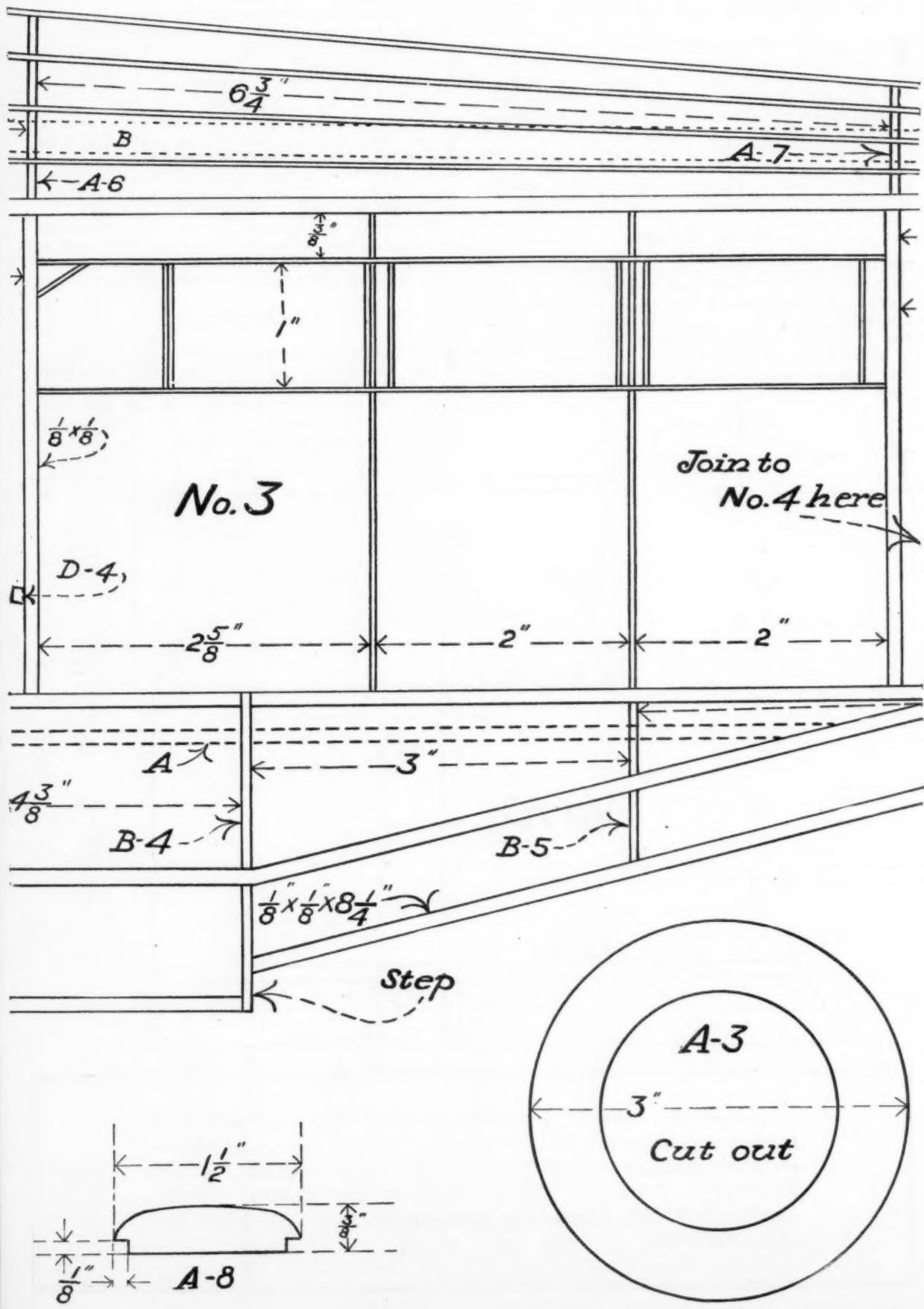
Landing-Gear

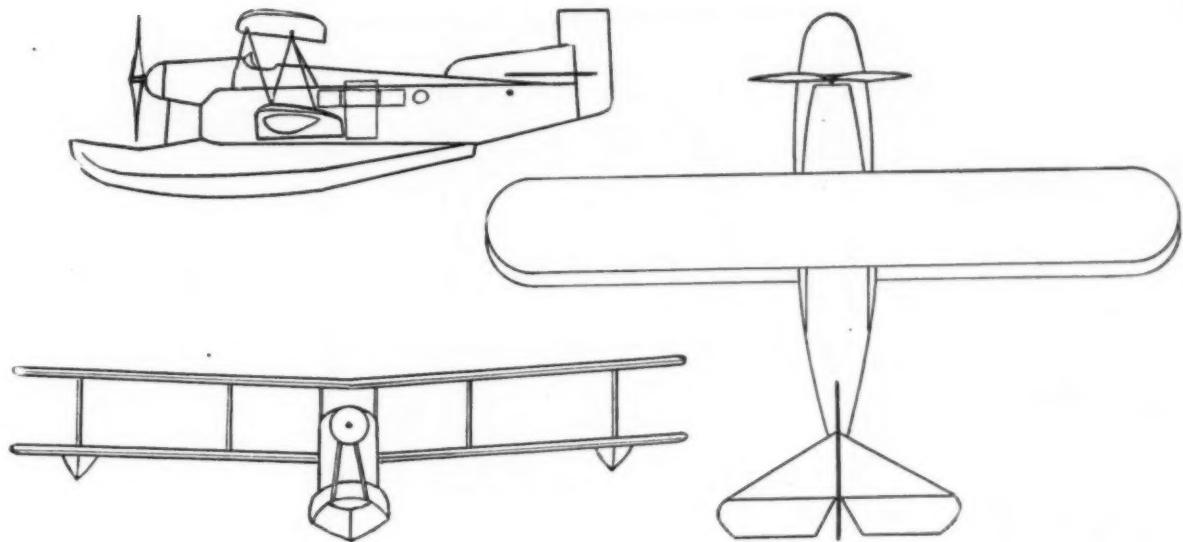
THE landing-gear is made of bamboo strips which are bent to shape as shown in drawing 2, using small pieces of wire for axles which are wrapped to bamboo strips with thread and ambroid. Or the axles may be made of one piece of No. 14 music wire bent to shape and extending from one wheel to the other.

Motor stick is held in place by wire clips bent to shape as shown on formers A-1 and A-7 and ambroided onto those formers as shown in drawings 1 and 16.

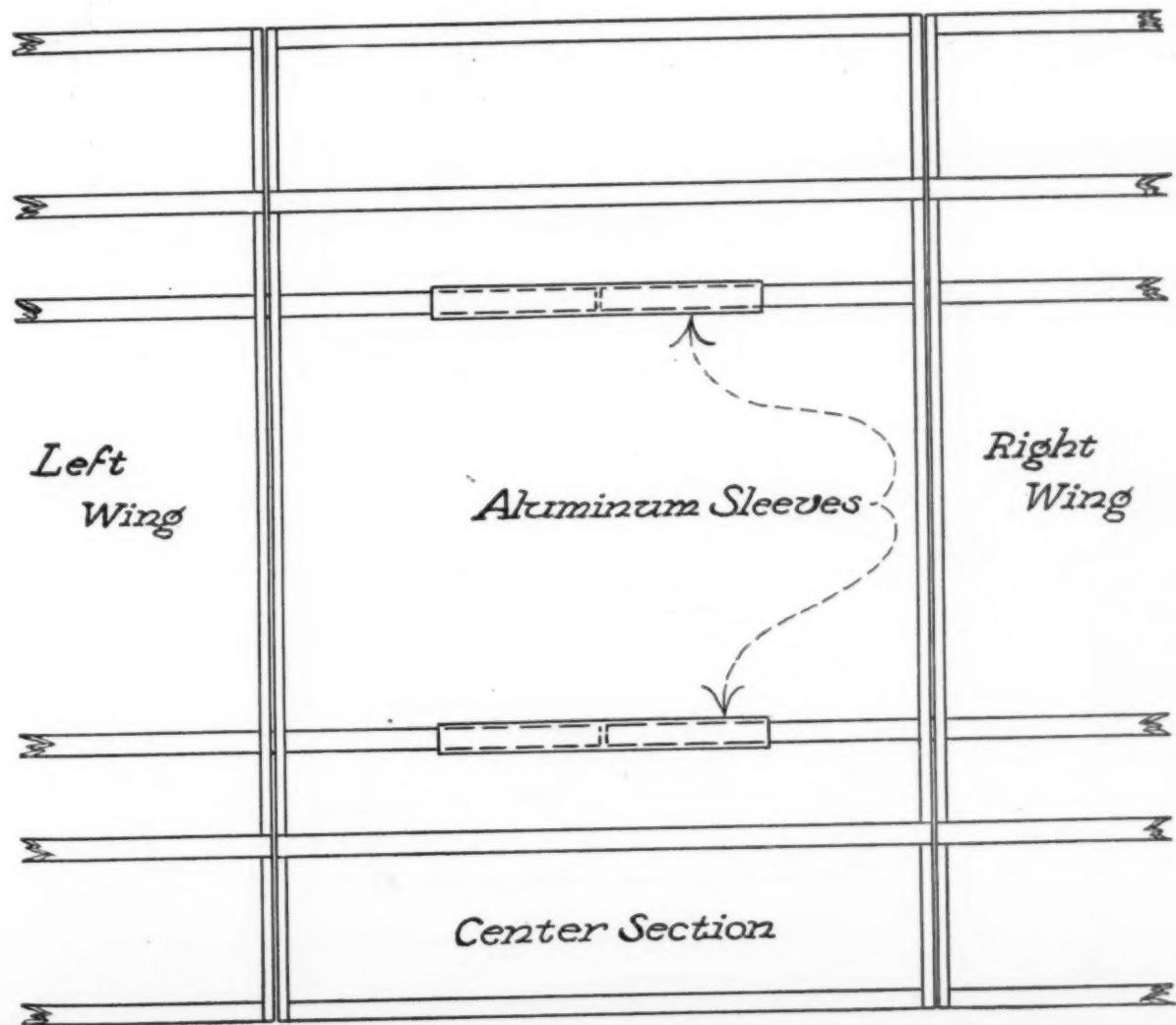


Those who wish to purchase parts for the construction of models, or blue-prints, will be furnished with the name and address of the company which stocks them, upon request for this information from the reader. Address the Editor, MODEL AIRPLANE NEWS, Macfadden Publications, Inc., 1926 Broadway, New York City.

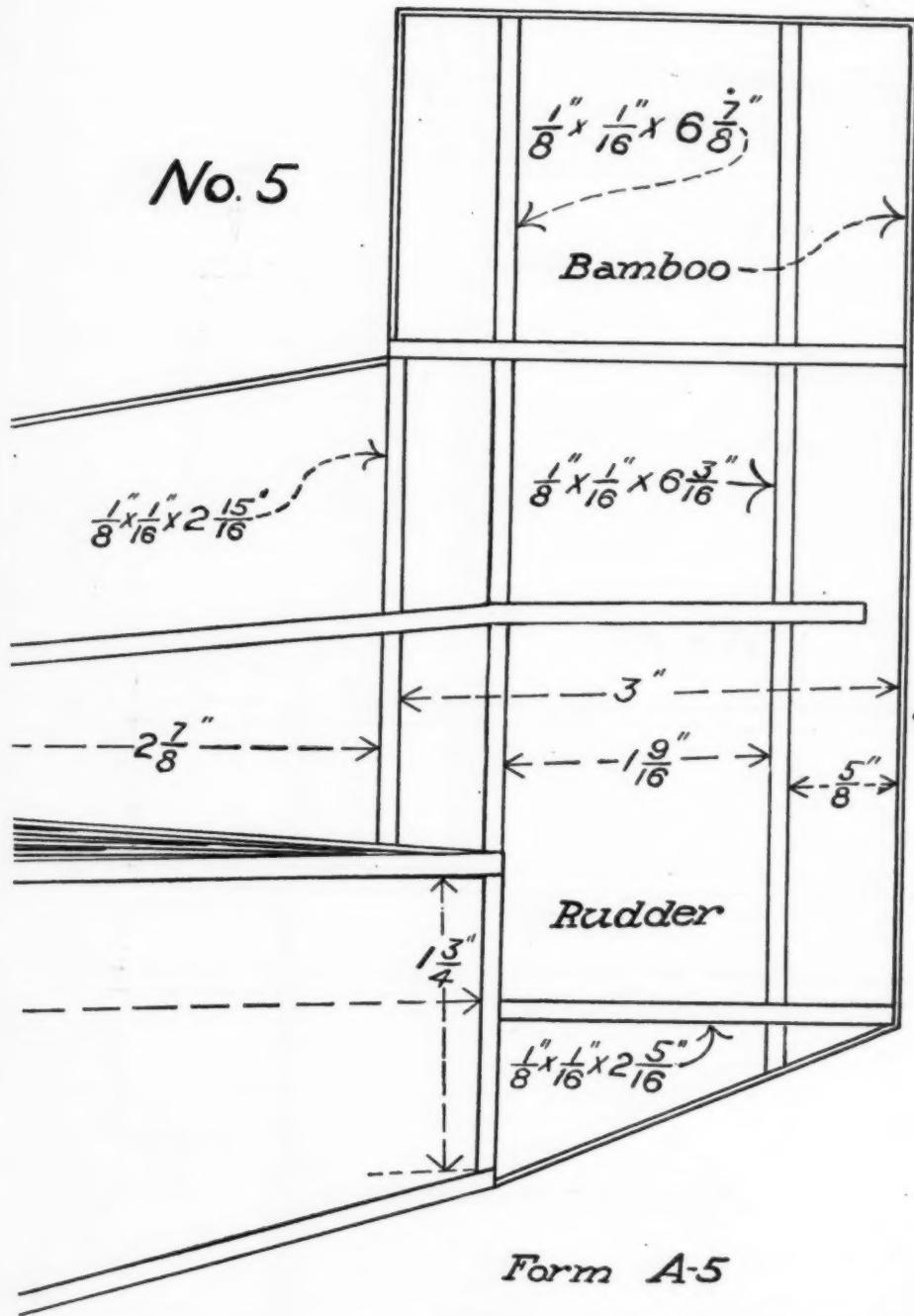




No. 17



No. 5



Rear Hook

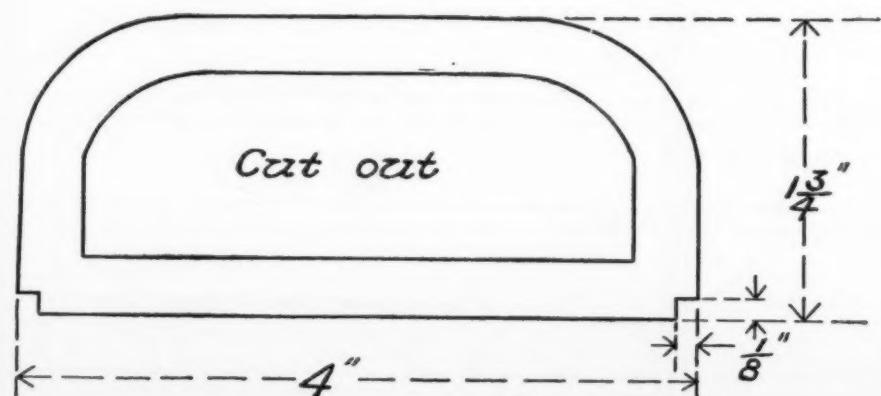


Propeller
Shaft

Bend as shown
after inserting



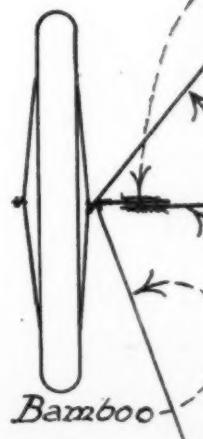
S Hook



No. 6

Bamboo
Strips
Shown by
Single lines

Wire
Spliced to
Bamboo



AB

B-1

A-1

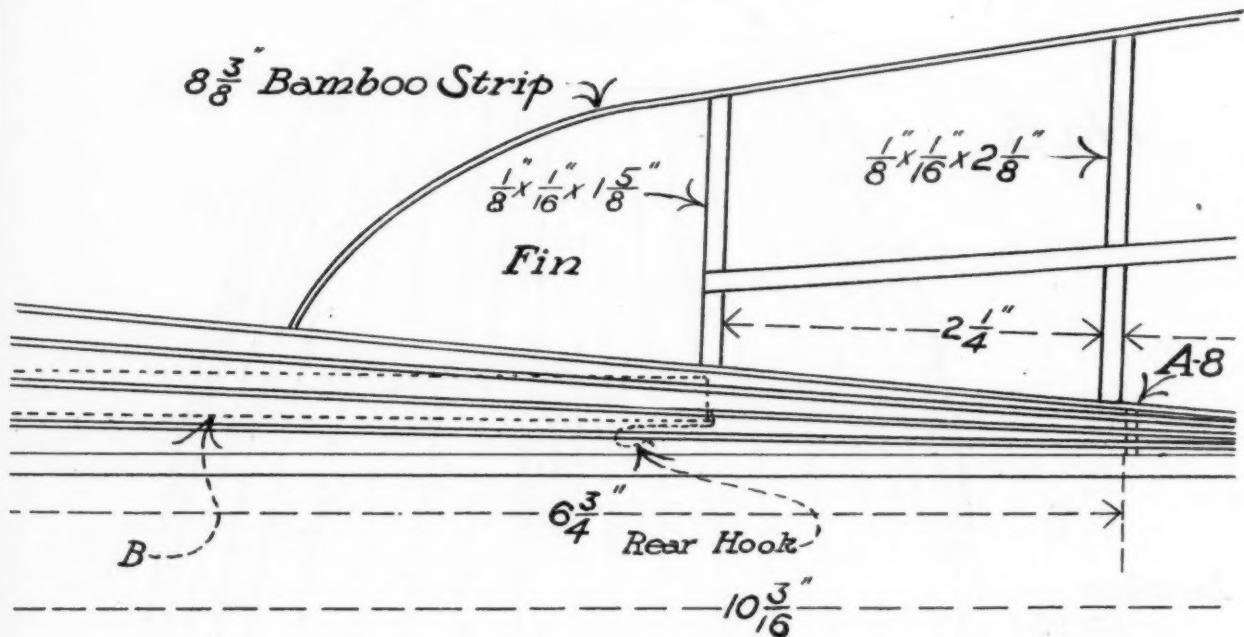
A-2

A-7

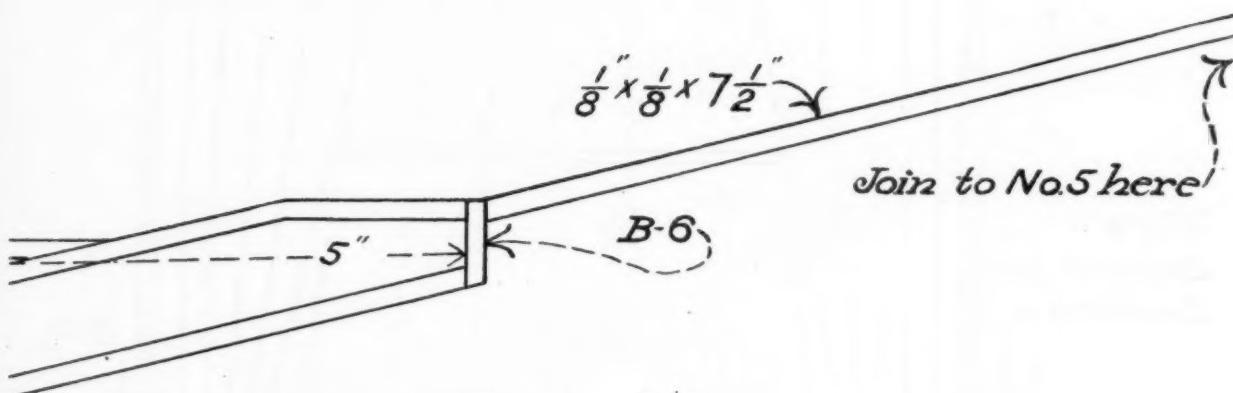
A-9

Join to No. 7 here

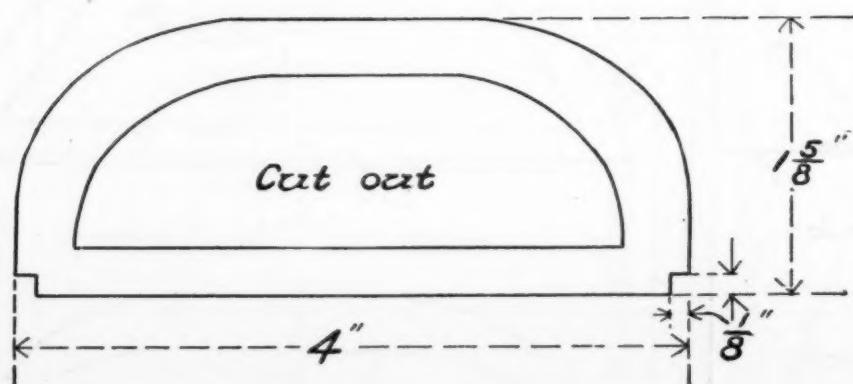
B-2



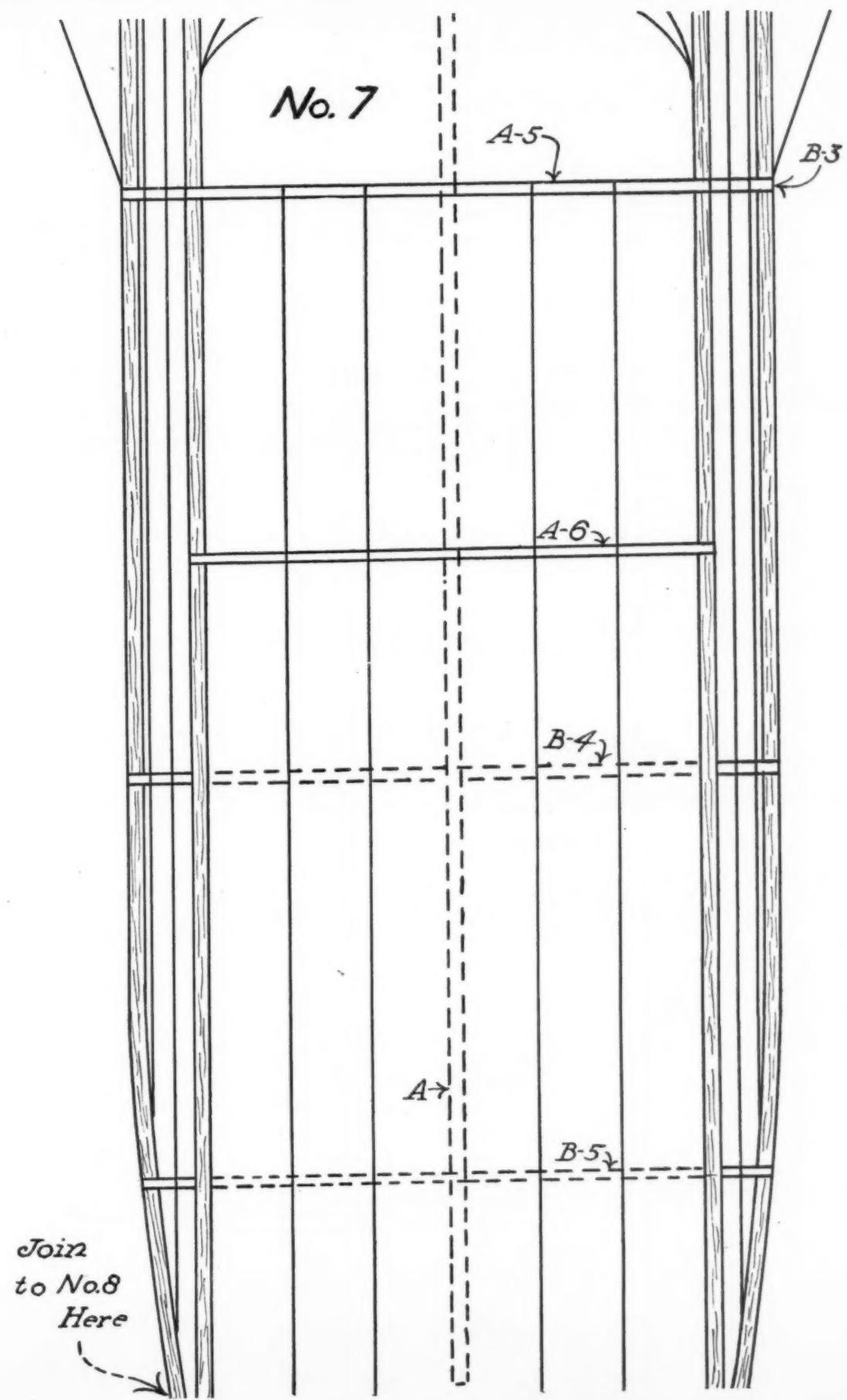
No.4



Form A-4



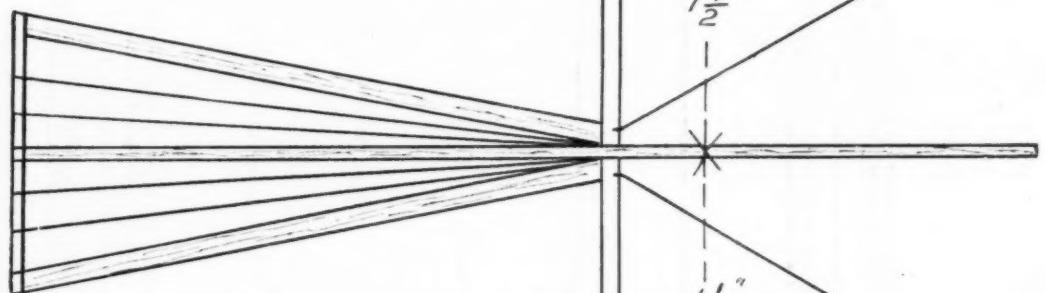
No. 7



Join to No. 10 here ↑

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$\frac{1}{8} \times \frac{1}{8} \times 6\frac{1}{2}$ "



$\frac{1}{8} \times \frac{1}{16} \times 6\frac{1}{2}$ "

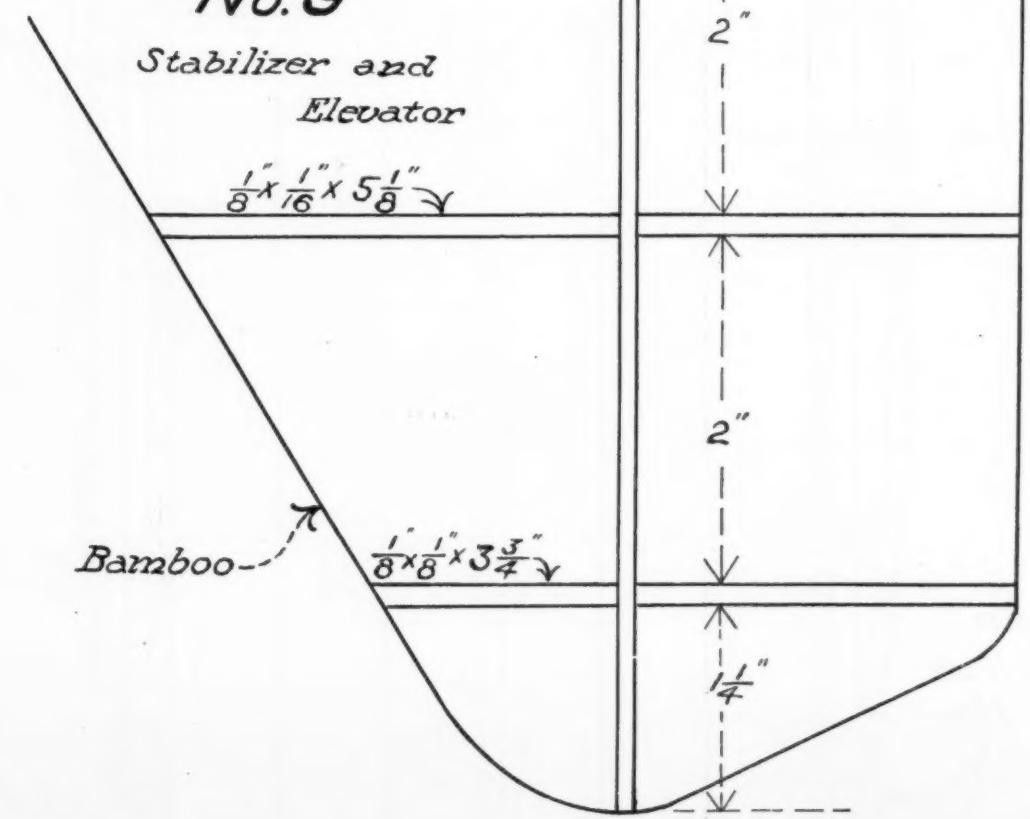
No. 9

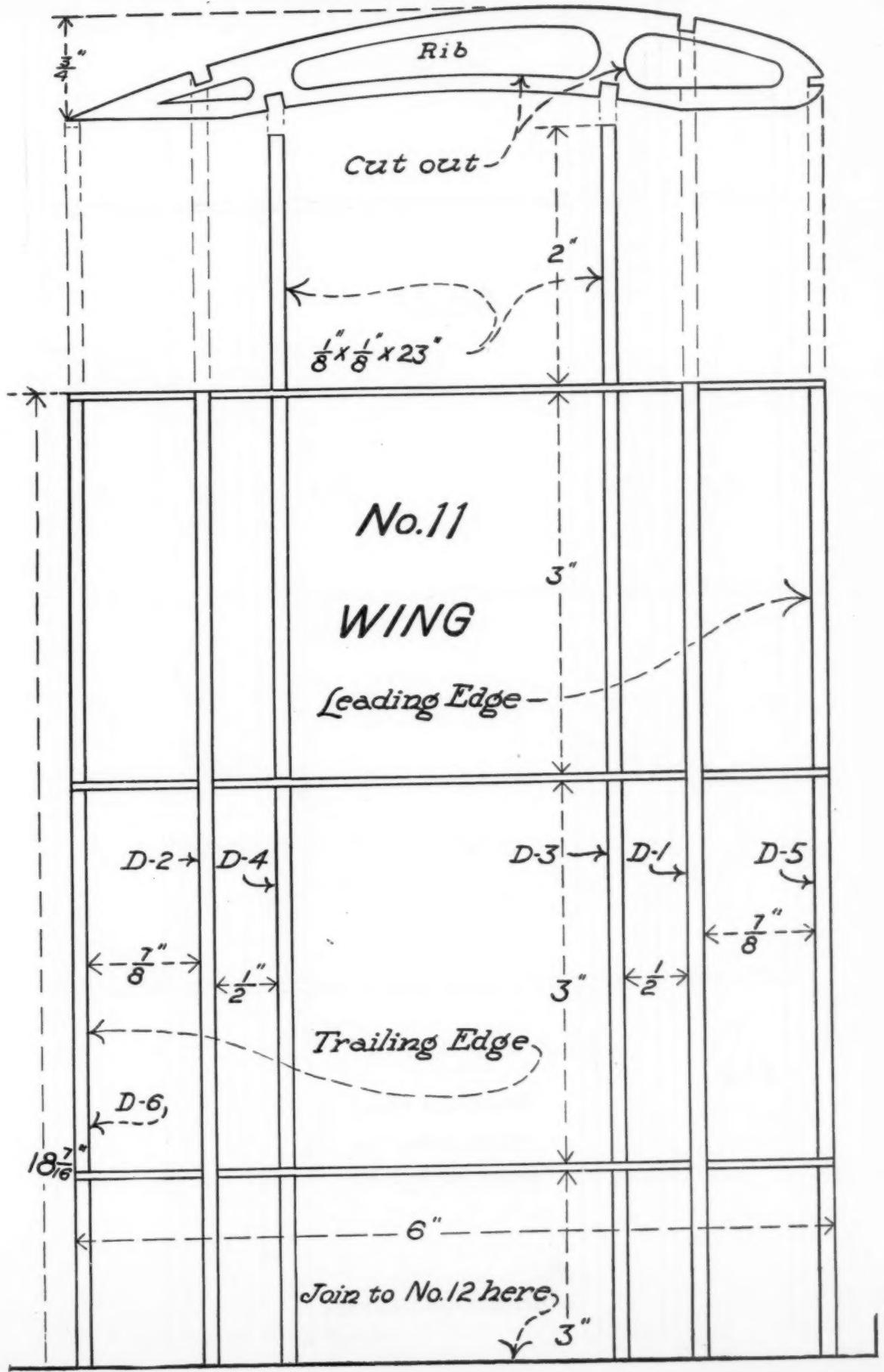
*Stabilizer and
Elevator*

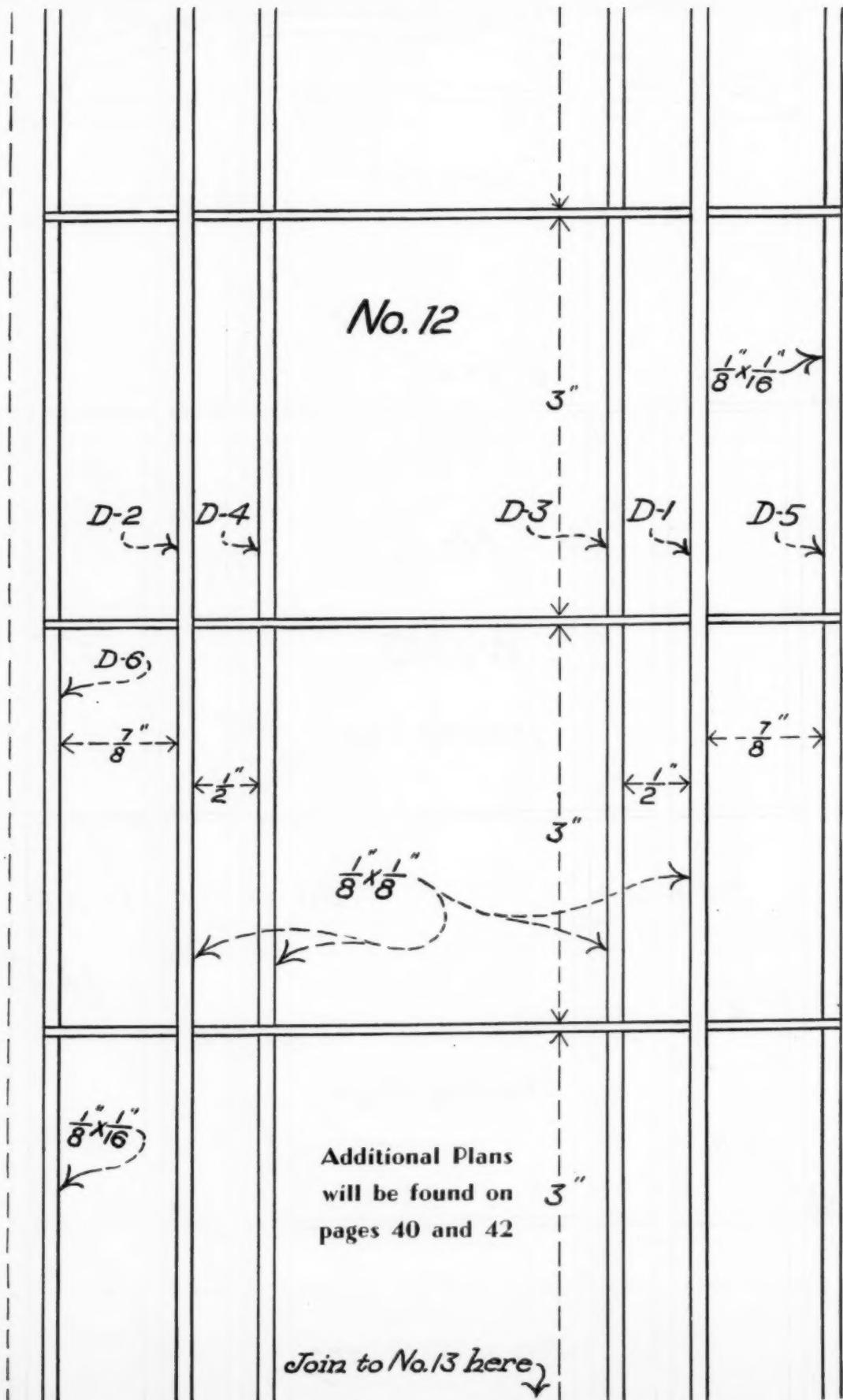
$\frac{1}{8} \times \frac{1}{16} \times 5\frac{1}{8}$ "

Bamboo-

$\frac{1}{8} \times \frac{1}{8} \times 3\frac{3}{4}$ "

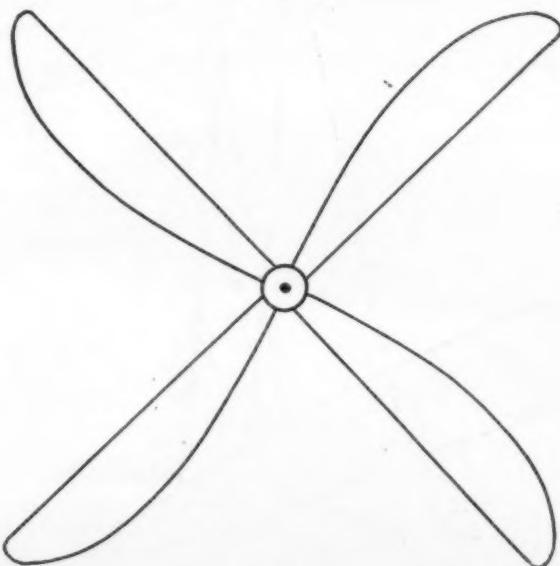
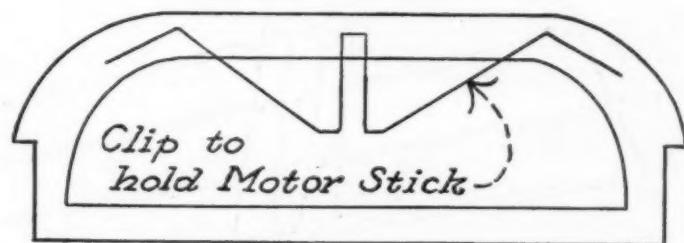
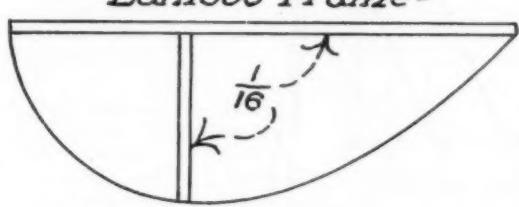
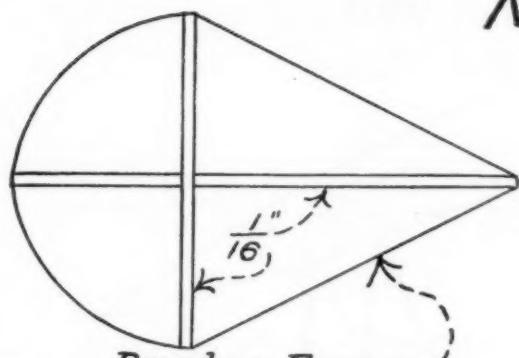




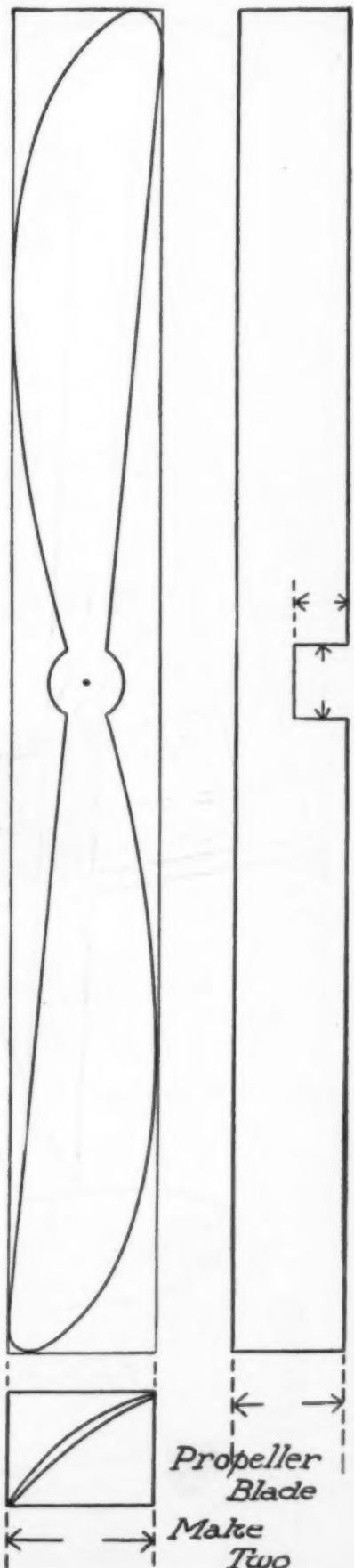


Additional Plans
will be found on
pages 40 and 42

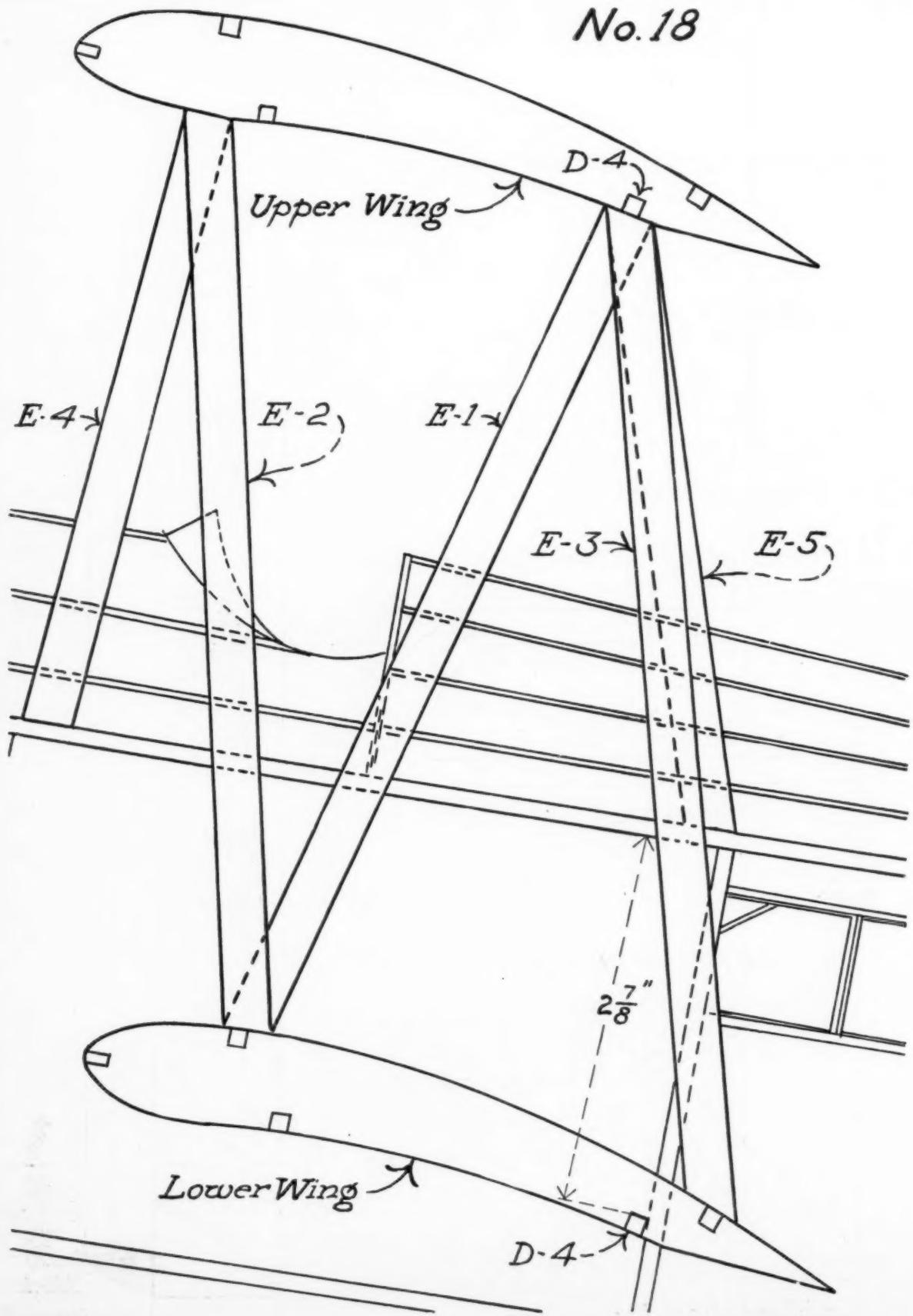
No. 16



Finished Propeller



No. 18



American Sky Cadets Airplane Contest

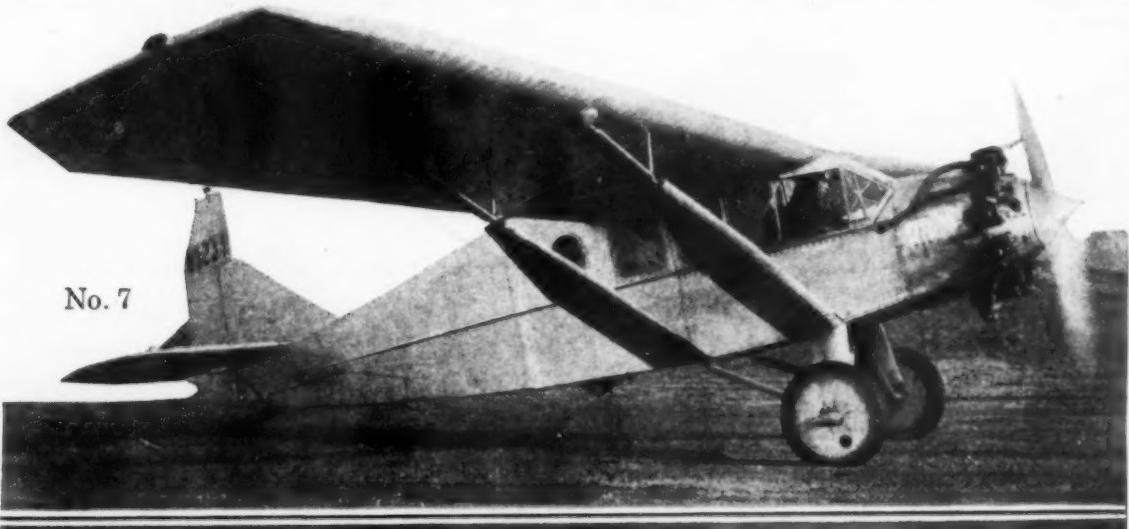
CASH FOR CHRISTMAS!

Do You Know Your Airplanes?

Here Is a Chance for Every Sky Cadet to
Earn Extra Christmas Money!

DO YOU know your airplanes? Here is a chance for every Sky Cadet to earn extra Christmas money. In the November issue MODEL AIRPLANE NEWS started this fascinating contest to enable thousands of Sky Cadets throughout the United States and Canada to earn a little extra cash for Christmas. One hundred dollars in cash prizes will be paid to the

First Prize . . .	\$50.00
Second Prize . . .	25.00
Third Prize . . .	10.00
Fourth Prize . . .	7.50
Fifth Prize . . .	5.00
Sixth Prize . . .	2.50



six winners of this wonderful contest. Five photographs of actual airplanes were published in the November issue and we now present to our contestants the five remaining pictures which complete the ten necessary for the contest. The object of the contest is to test your knowledge of airplanes and your ability to recognize each.

Can you name these ten planes? In addition, can you tell what are the three most popular uses each plane is put to throughout the world? Get into this contest and try your best. It is open to every one. You may win.

For the convenience of our readers who were not fortunate enough to obtain a November issue, we are reprinting the five pictures which appeared in that

No. 8



issue so that all can have an opportunity to enter the contest at this time with an equal chance of winning.

Rules for Contest

Read the following rules carefully:

1. All members in good standing of the AMERICAN SKY CADETS are eligible for this contest. Employees of Macfadden Publications, Inc., and members of their families can not enter.

2. Only the full name of the plane, with identification numbers or letters of model type will be considered correct.

(*Example:*
Curtiss J.N. 4
Identifying this
plane simply as
a "Curtiss"
would not be
considered cor-
rect.)

3. Do not send your identifications separately. Hold them until you have named all ten planes.

4. With your identification must be given the three most popular uses to which each plane is put in its service throughout the world.

No. 9



No. 10



5. All answers of contestants must be addressed to the Editor, MODEL AIRPLANE NEWS, 1926 Broadway, New York City. He will be the judge and all entrants must agree to accept his decisions as final.

In the case of a tie or ties the full amount of the prize or prizes will be paid to the contestants so tying.

6. This contest closes December 15th, 1929, at midnight and any entries received after that date and hour will not be considered.

Checks to the winners will be mailed from the office of MODEL AIRPLANE NEWS not later than December 20th, so as to be in the hands of the lucky ones before Christmas.

The winners and correct name and uses of each plane will be announced in the February issue of MODEL AIRPLANE NEWS.

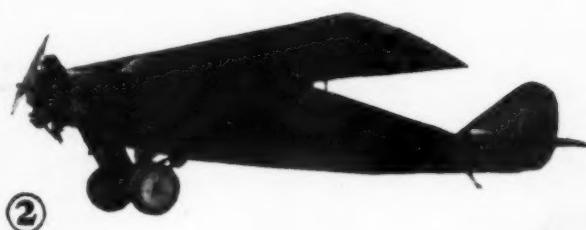
Here's your chance to make this the happiest Christmas of all! Get on

your thinking cap, and go to it with a will to win. There is no reason why you should not carry off first prize.

November's Contest Pictures



It's Never
Too Late
To Begin.
Now's
Your Chance!



①



②



③



④

For the convenience of those who were unlucky enough not to have obtained a copy of November MODEL AIRPLANE NEWS, we are reprinting here the first five pictures of the contest.

The Golden Swamp

Beset by the Dangers
of the Glades,
but Aided by Two
Friendly Indians,
Squint and Fred

Continue Their Search

By
RAOUL WHITFIELD



BRENT FABER, known as Squint, and Fred Lane set out in a DeHaviland plane in search of their friends—Dave Brown and Lew and Bert Kane—who are cruising in a twenty-eight-foot boat, the Betty G. They are believed to be lost in the dangerous Everglade swamps.

Flying through fog, the boys near the swamp and sight two Indians in a dugout. The dugout disappears just as Fred and Squint identify the object waved by one of the Seminoles as Dave's football sweater.

With nothing but black water below them, Squint makes a forced landing on a narrow ribbon of sand, which fortunately proves to be a strip of beach. While Fred works over the plane, Squint explores and finds a dugout. Fred saves Squint from being bitten by a moccasin.

Just as the ship is ready for the air a series of shots ring out. The boys hurriedly hop off in search of the shooters. They again sight the dugout carrying two Seminoles. One of the Indians signals them by waving Dave's sweater, then pointing to the north. Can it be that the Betty G. is somewhere near?

SQUINT nodded his head. "I see them!" he cried excitedly. "Probably the same ones that we picked up before—the ones carrying Dave's sweater. I'll drop down and we'll look them over."

He nosed the DeHaviland down sharply, gliding for

the black water where the dugout with its two figures was drifting.

"They're not poling," Fred stated more quietly, keeping his glasses on the craft. "Looks like they're just drifting. But what can we do? How can we get down to talk to them?"

Squint groaned and shifted around to look at Fred. "Still at it!" he answered.

"**W**AIT until we see who they are and what they do when they see us."

Fred was silent for several seconds. The DeHaviland was shrilling down now with the engine throttled low.

"They won't be scared to death," Fred said suddenly. "These Seminoles have seen planes before."

Squint leveled the ship off. They were down to a which Fred could see from the rear cockpit.

"I don't expect them to be scared to death," he returned. "But I'm pretty curious to know about that sweater. If there's any chance of getting down; another beach—"

"There isn't!" Fred spoke in a decided voice. "I've been looking all around, using the glasses. It's all black water, narrow streams and mangrove. The spot where the dugout is seems to be walled in."

Squint leveled the ship off. They were down to a thousand feet.

"It looks that way," he agreed. "But it isn't. The



Through the rigging of the DeHavilland they saw him—a Seminole, stripped to the waist, standing beside the dugout, a rifle gripped in his hands!

Indians seem to know we're coming. Watch them."

It was a fact. As they circled in a thirty-degree bank, at a thousand feet, both Seminoles stood up in the canoe, heads raised toward the plane.

"The same two!" Fred cried suddenly. "I can see the sweater through the glasses!"

Squint nosed the ship over again. His voice was grim as he let her glide down toward the dugout.

"Look carefully, Fred! Have they any rifles in that dugout?"

The plane was whistling down again, getting nearer and nearer to the black water of the swamp. Fred spoke after several seconds.

"Can't see a rifle," he replied. "They've got a couple of spears and something that looks like fishing poles."

Squint's face was sober.

"If they haven't guns, they're not the ones we're looking for," he stated.

At 200 feet he leveled off again and circled above the dugout. Both he and Fred had a fine view of the craft and of its occupants. The Seminoles were standing motionless. The color of their attire flashed in the sun. Their hair was black and their faces browned by the sun and wind. They made no sign, waved no greeting toward the ship.

Squint could see the sweater. It lay between the two Seminoles, the white of it making a sharp contrast to the dark color of the dugout and water.

"They haven't traveled far," he commented. "This is near the spot where we saw them last."

"They don't seem particularly savage," Fred commented. "But if they have Dave's sweater—"

He broke off as the tallest Indian of the two suddenly leaned forward. With a swift motion he seized the sweater and raised it above his head.

"He's throwing it overboard!" Fred shouted through the phones. "What's the idea?"

"He's signalling!" Squint held the ship on its course so that both of them could watch the actions of the tall Seminole.

The sweater was being waved from side to side violently. Then the Seminole tossed it down in the dugout and faced around in the craft. With a stiff arm and one pointed finger he faced the north.

"The *Betty G.*!" Squint cried out. "He's trying to tell us where he got the sweater, where the boat is!"

THIE Indian raised the hands with which he had been motioning. He held seven fingers to the sky, then pointed straight to the north again, then held the seven fingers high once more.

"Seven miles to the north!" Squint cried excitedly. "He's trying to tell us just where the boat is, Fred."

"Maybe it's a trap," Fred Lane shot back swiftly. "Suppose he's just trying to throw us off the track?"

Squint felt a sudden misgiving. What if Fred were right and the Seminoles were trying to throw them off the trail?

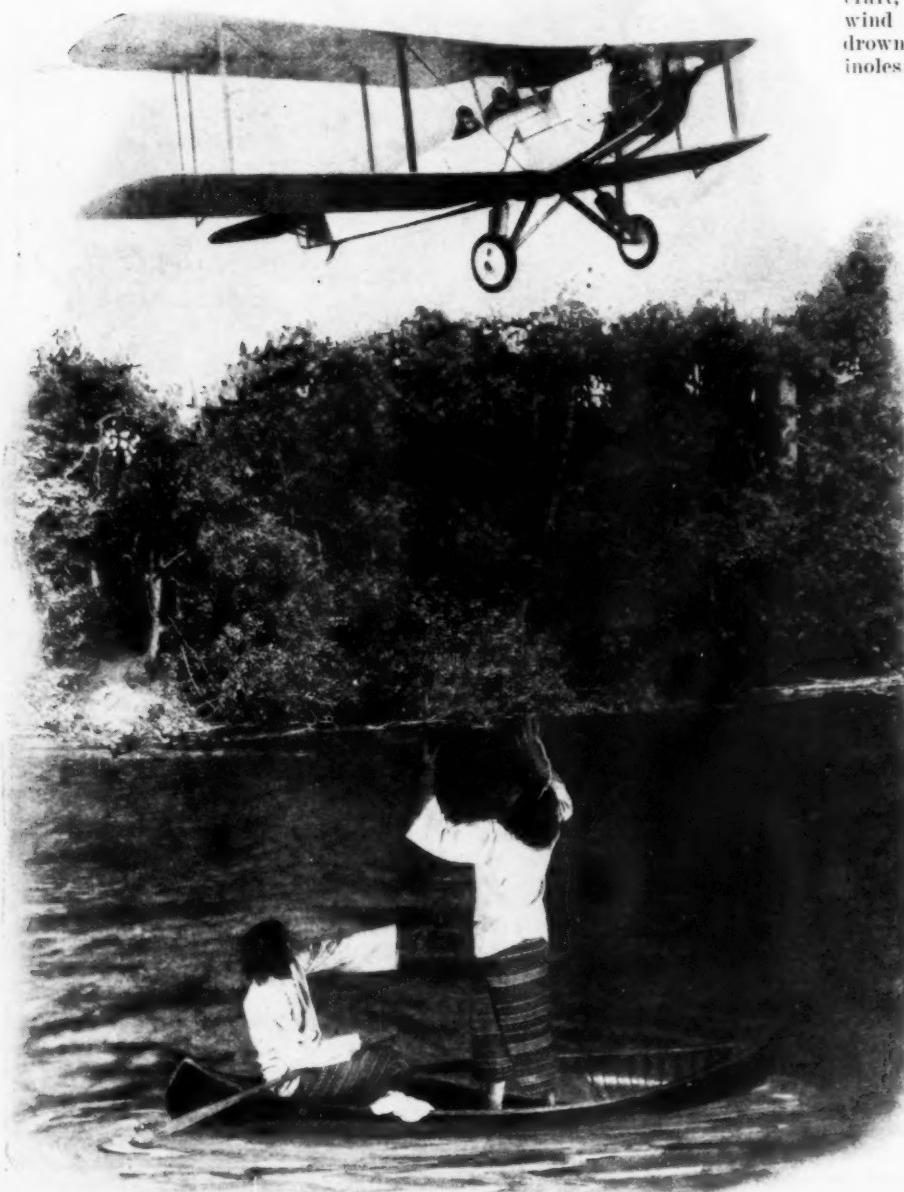
"Fred," he instructed, "I'm going to dive right over

that dugout. No, I'll come down to one side of it. Just as we get within ten or fifteen yards of them you shout 'a boat' as loud as you can. Then we'll see what he does."

"Right," Fred replied. "But that won't mean anything."

Squint did not reply. He got the DeHaviland out of the bank, swung away from the craft, then circled around, diving and throttling the engine so low that it was only a dull rumble in their ears.

As they came down he got a good look at the two Seminoles. They were stalwart chaps, with their hair banded back from their faces, legs spread slightly apart to retain their balance in the dugout—well-built men, both of them.



The tall Seminole raised seven fingers again as they came down. "Boat—she seven mile north!" he said

"A boat? Where?" Fred's voice rose in a roar.

Squint heard Fred shout the words, adding one of his own, and then the ship was gliding past, with the engine ready to roar again.

"Go up and then come back again!" Fred instructed. "The tall one nodded and shouted, but I didn't catch his words."

Squint advanced the throttle; the engine roared through the exhausts, the ship climbed. At 500 feet he banked sharply and dived again, cutting the throttle.

He saw that both Indians were pointing now to the north.

"They understand, anyway," he muttered to himself.

The tall Seminole raised seven fingers again as they came down. Squint broke the glide of the ship before they neared the craft, so that the shrilling of wind through wires would not drown any words that the Seminoles might utter.

He heard them distinctly.

They were guttural and loud.

"Boat—she seven mile north!"

That was all. Then the engine was roaring again and Fred was shouting excitedly through the 'phone connections.

"A boat seven miles north, he says, Squint! That means the *Betty G*; unless it's a trap."

Brent Faber felt a sudden sinking sensation. The Indian had said there was a boat seven miles north of this spot, but he had said nothing about the crew. True, he had Dave Brown's sweater. But supposing they had come—the two Seminoles—upon the wreck of the *Betty G*? There might have been no crew left and the sweater had caught the eyes of the Indian.

Squint spoke of it to Fred and the latter was silent for several minutes. The DeHaviland was headed to the north and Squint climbed her steadily.

"THERE would have been more of value aboard the *Betty G*, than Dave's sweater, Squint," Fred reasoned. "And how about the six shots? We must have been fooled a little on the direction of the sound. I believe

that the boys are sticking close to the ship and that they saw us when we had that forced landing. They tried to signal us."

"I'd like to think that, Fred, but look at the facts. They didn't signal us until we'd been down quite a while—if they were signalling. And that's funny."

"Not so funny," Fred retorted. "Dave would know that we couldn't hear shots above the roar of the exhausts and even the wind through the flying wires might drown out the sound. He would have waited until he was sure we were down."

"Perhaps," Squint stared ahead and below. The plane was flying on even keel at 3,000 feet. "But why wouldn't they have gotten the Seminoles to guide them out?" he asked. "And why is it we can't seem to pick them up from the air? Right now, at 3,000 feet, I can see ten or twelve miles ahead—and no sign of the *Betty G.* She's big enough to show up. And how did that Seminole come to have the sweater? Dave cherished it, Fred. You know that."

There was a little silence in the rear cockpit. The ship flew on.

Fred was using the glasses again, searching the swamp to the north.

"We're getting low on gas," Squint stated. "I'm cutting in the first emergency tank now, Fred. If we don't find the *Betty G* pretty soon—"

HE stopped. It was not a cheerful thought. But he knew that Fred understood what he had been about to say.

"Six miles!" Fred muttered through the phones. "Six air-miles, Squint. Better start to circle pretty soon. If Dave hears us, he'll spot us quickly enough. And he'll put out a ground-strip of some kind—something that will attract us."

Squint nodded. He held the ship on its course for thirty seconds, then banked over and started to circle.

"This is my idea of the seven miles," he stated. "See anything?"

Fred shook his head slowly.

"Not a thing," he said regretfully. "But give them time to get out something that will catch our eye. That twenty-eight-footer isn't bright in color. It would mix with this black water and green-brown foliage pretty easily. We had trouble finding the dugout, you know."

Squint smiled grimly.

"The *Betty G* is big, compared to that Seminole canoe," he returned. "I wonder if they were giving it to us straight?"

The DeHaviland droned steadily in a wide circle. Both Squint and Fred continued to search the swamp below with their eyes. Fred was using the day-glasses, but Squint could not use his own glasses and handle the ship, too—not when he was forced to hold it in a bank.

"What's that? Hold her steady, Squint! Now, a

few points off our port! See that pole sticking up on the far side of that mangrove patch? See those pelican on wing—a flock of them? Almost directly below them! See that—"

"I see it! Looks like a tall pole—a mast, Fred!" Squint's voice was raised. "A mast of the *Betty G!*"

"That's it! We've found them, Squint. We've found them!"

There was more than a tremor of excitement in Fred Lane's voice. Squint, sitting stiffly in the front cockpit, nosed the plane down.

Then, as they swooped low, they saw her—the *Betty G.*, her bow slanting up at an angle and partially hidden in the mangrove growth, her stern low to the black water. There was a streak of black, low on the hull; it was evident that the tide was out and that mud, stirred up by her passage into the tangled growth, had been plastered thickly on the wood of her.

"She's rammed herself into the mangrove!" Fred muttered. "But how did it happen? Dave is too good—"

"They may have thought they could get through that wall of growth," Squint interrupted. "It's the *Betty G.*, all right. But the thing that worries me is where the crew has disappeared and why they left the ship."

Fred's voice was low. "Maybe they *haven't* left the boat, Squint," he returned. "If we could only get down there!" He said fervently.

Squint was circling over the slanted shape of the twenty-eight-footer. He had the DeHaviland down to a thousand feet and dropped it 800 more in a wire-shrilling dive. At 200 he circled steadily.

THREE was no sign of life on the grounded craft. From the stern floated the American flag, its color standing out against the black of the swamp water. Except for the muddy mark below the twenty-eight-footer's normal water-line, she appeared trim enough. Her rigging was clean and taut and the little they could

see of her deck seemed ship-shape.

More than half of the craft was hidden in the arching mangrove growth. The stream on which the boat had been sailing was fairly wide and the water appeared deep enough.

"She's been running southward along this stream," Fred stated slowly. "The water ends in that blank wall a hundred yards ahead. Why didn't she go on, at least until she had come to that mangrove blockade?"

Squint shook his head. "The stream's a good fifty feet wide," he stated. "The water looks pretty deep and the *Betty G* doesn't draw much water, anyway. Dave could have turned her around and gone back."

For a few minutes both were silent. The plane droned its monotonous song in the quiet air. And it was eating gas all the time—gas that would be badly needed later on.

(Continued on page 54)

MACFADDEN AVIATION ADVISORY BOARD

Don't you know?

Ask us!

NUMEROUS letters have been received from our readers asking which is the better, aerodynamically speaking, a monoplane or a biplane.

Aviation dictionaries, as a rule, describe a monoplane as an airplane with one main supporting surface which extends equally on each side of the fuselage. Sometimes this main supporting surface is divided into two equal parts by the fuselage. A biplane is an airplane with two main supporting surfaces, or wings, one over the other.

These descriptions, however, do not quite explain the aerodynamic difference between the two. In this respect a monoplane is a more simple and more efficient machine than the biplane, whose low-carrying capacity is equal to that of the monoplane. The resistance of the monoplane is obviously less and therefore it will fly with less power or obtain a higher speed with the same power.

On the other hand, a biplane can be made lighter and stronger and yet have less wing span than a monoplane of equal area. The lower efficiency of the biplane is caused by the placing of the airfoils one above the other, which has the effect of reducing the effective lift of the machine because the lower surface of the upper wing and the upper surface of the lower airfoil work in, or are supported by, disturbed air. Much of the additional parasite resistance of the biplane, as compared with the monoplane, is caused chiefly by the fact that the biplane carries in-between struts, bracing wires, etc.

Now we are going to spring the surprise we hinted at to hundreds of our readers who have written to ask for the names of the different types of airplanes used by both the Central and Allied Powers during the World War. Obviously, there are too many types of airplanes to permit publishing them all in one issue and for this reason we can only print part of them now and continue in future issues until we fully satisfy your curiosity. The Board will also publish in future issues the names of the "aces" of both the Allied and Central Powers. These "aces" are counted as having brought down ten or more enemy planes.

EACH month the Macfadden Aviation Advisory Board will endeavor to answer all questions concerning model building and aviation in general. Address all questions to

The
Macfadden Aviation Advisory Board,
MODEL AIRPLANE NEWS,
1926 Broadway,
New York City.

Enclose with your letter a self-addressed and stamped envelop to facilitate an answer, as space is limited and all letters can not be answered in these pages.

Below are fifty of the many British planes used during the War:

F. E. 2b, Beardmore 120 h.p. engine biplane
R. E. 8, 130 h.p. R.A.F. engine biplane
S. E. 5, biplane
Aircos DeH. 2, pusher type, 100 h.p. Gnome engine
Aircos DeH. 4, Rolls-Royce engine
Aircos DeH. 5, single-seater fighter, 110 h.p. Le Rhone engine
Aircos DeH. 6, elementary training machine for pilots, 100 h.p. R.A.F. 1A motor
Aircos DeH. 9, 240 h.p., B.H.P. engine
Aircos DeH. 9a, 375 h.p. Rolls or 400 h.p. Liberty engine
Aircos DeH. 10 & 10a, high speed day bombers, 2-400 h.p. Liberty

engines
Alliance "Seabird", 450 h.p. Napier "Lyon" engine
Armstrong-Whitworth F.K. 3, 90 h.p. R.A.F. training machine
Armstrong-Whitworth F.K. 8, 160 h.p. Beardmore engine, used for contact patrols, artillery shooting, light bombing, photography and reconnaissance
Armstrong-Whitworth "Armadillo", 220 h.p. B.R. 2 engine
Armstrong-Whitworth "Ara", single-seater fighter, 320 h.p., A.B.C. "Dragonfly" engine
Austin "Ball", single seater biplane, 200 h.p. Hispano-Suiza engine
Austin Greyhound, fast, quick-climbing, two-seater, fighting and reconnaissance biplane, 320 h.p., A.B.C. "Dragonfly" engine
Avro Standard training machine, two-seater, 504 K. 100 Mono Gnome engine or 110 Le Rhone engine
Avro two-seater fighter, type 530, 200 h.p. Hispano-Suiza or Sunbeam "Arab" engine
Avro "Pike", a twin-engined, three-seater fighter, bomber, 2-230 h.p. B.H.P. engines
Avro twin-engined "Manchester Mark I", for photography, reconnaissance and bombing, 320 h.p. A.B.C. "Dragonfly" engines
Avro twin-engined "Manchester Mark II", for photography, reconnaissance and bombing, 300 h.p. Siddeley "Puma" engines
Avro "Spider", single-seater (Continued on page 46)

How to Build a B-M Indoor Tractor

**A Pen-knife, Round-nose
Pliers, Razor Blade and
Twenty-five Cents Builds this
First-class Indoor Tractor**

OME of the boys have been asking for a model airplane which can be built very cheaply and as usual MODEL AIRPLANE News has fulfilled the desires of its readers.

This is an original design, named after the founder of the AMERICAN SKY CADETS, Bernarr Macfadden. That's what the "B-M" stands for.

Get out the tools, boys, and go to work!

Follow the plans and instructions carefully and in half an hour you will have a flying model which will prove a gem in flight.

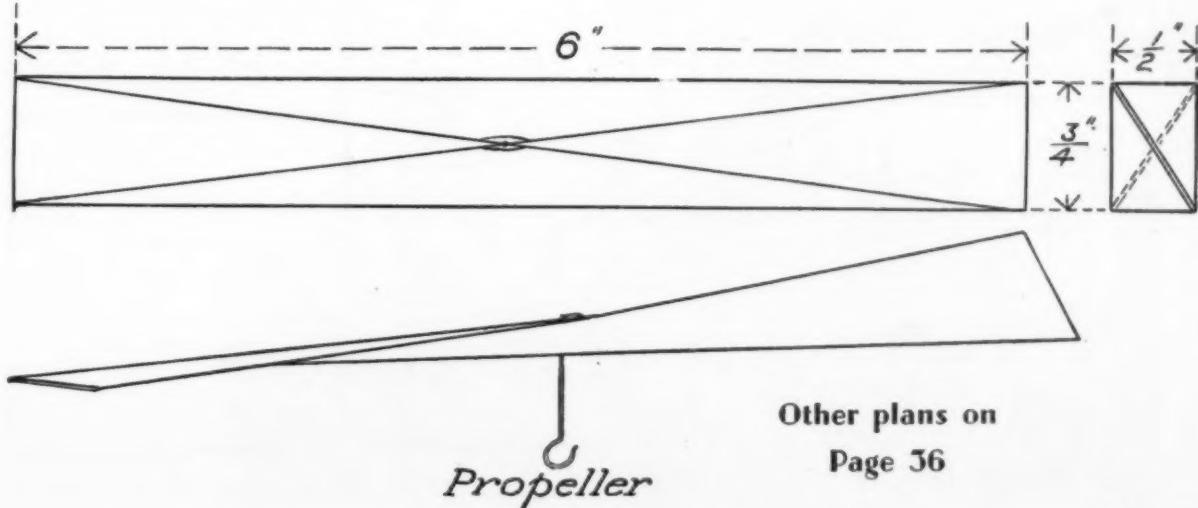
If the builder wishes to increase the size of this model, he may do so by

Necessary Material			
			Cost
1 piece	bamboo	1/4" x 15"	\$0.02
1 piece	balsa wood	1/16" x 3/16" x 8"	.02
1	propeller block	1/2" x 3/4" x 6"	.03
1 sheet	Japanese tissue	10 1/4" x 12 1/4"	.02
1	thrust bearing		.05
1 foot	piano wire No. 8		.01
2	copper thrust washers		.01
1 vial	ambroid		.08
1 foot	1/8" flat rubber		.01
			Total \$0.25

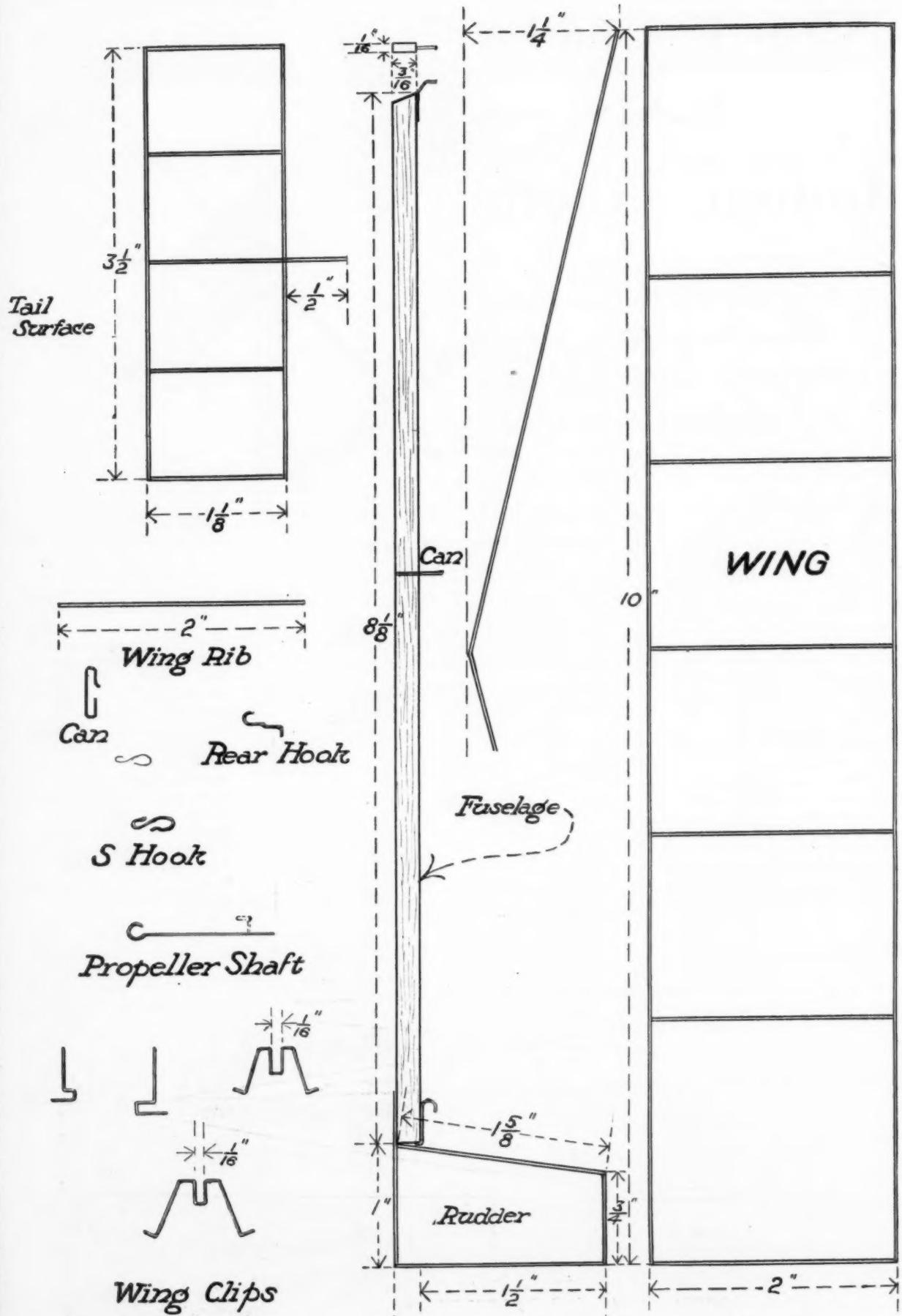
doubling all measurements and using 1/16" x 1/16" balsa instead of bamboo and a 10" propeller.

Lay out all necessary prints of the B-M indoor tractor on your work-bench or the kitchen table and start the construction of this sturdy little indoor model by splitting your piece of bamboo into 1/16-inch strips. Now take two pieces of the 1/16-inch bamboo strips and lay them on the drawing in proper place to form the leading and trailing edges of the wing section. Cut up smaller pieces for the ribs, being sure to make them exactly like the drawing.

(Continued on page 49)



Other plans on
Page 36



The American Sky Cadets

THE aviation industry need have no fear for its future since it rests securely upon the present American youth. Wherever American boys gather, regardless of race, color or creed; time or place; aviation in all its branches is talked of. Boys, not to be outdone because of their age, have taken to studying aeronautics, not actual flying but the designing and building of model aircraft. Both exact scale-models of large aircraft and of scientific models of built-up or stick design facilitate the study of the theory of flight. Model airplane clubs are being formed throughout the country, in the Y. M. C. A.'s, Y. M. H. A.'s, boys' clubs and settlement houses. One of the most notable achievements in model airplane organizations and activities is the work of the model airplane club at the Hebrew National Orphan Home, 407 Tuckahoe Road, Yonkers, N. Y.

The H. N. O. H. Model Airplane Club was founded about two years ago. A special announcement was made at dinner time of the coming project, asking those boys interested in aviation and model-airplane building to meet after dinner and start the ball rolling. The response was tremendous and after due discussion and elimination the club started with a membership of thirty boys. Incidentally it was decided that thirty should be the maximum club membership at all times.

A SPECIAL room in the superintendent's cottage was assigned to the boys and in a surprisingly short time a fully equipped workshop was rigged up. But what were the boys going to work with? There were no tools, no equipment, no model-airplane supplies. The institution's budget was not scheduled to include this new activity and therefore no immediate funds were available. This situation was cleared up at once by the Home's president, Justice Aaron J. Levy of the New York State Supreme Court, a well-known philanthropist. Justice Levy at once recognized the value of the model-airplane club and what it would mean for the boys to receive an aeronautical education. He promised his aid at once to secure the necessary equipment, tools, and supplies. He carried on the message to the other members of the board of directors and they heartily responded to the boys' needs.

A practical working schedule was decided upon at one of the club meetings and foremen were appointed to take charge of the different workshop periods. Be-

cause of the established routine of the Home it was necessary to divide the shopwork into four groups and appoint four foremen. It became the duty of the foremen to keep track of the materials and tools and to see that matters ran smoothly during work periods.

A novel view of a model parachute and its mother ship built by Bob McCorkle, Monrovia, California, student pilot. Plane was too high above the parachute to show the actual release

A twin speedster launched by one of our older enthusiasts in the Central Park Derby



Various aeronautical men volunteered to give their services at designated times, so that the members of the H. N. O. H. Model Airplane Club enjoyed the benefit of a thorough aviation ground study course, similar to the courses given at recognized civil and military aviation schools. The course included the study of aerodynamics, theory of flight, meteorology, construction, rigging, engine mechanics, assembly, instruments, propellers and nomenclature. The instructors were Lieutenant Frederick M. Hopkins, Jr., U. S. Army Air Corps, assistant professor of Military Tactics at the Guggenheim School for Aeronautics at New York University; Ensign Linus Congdon, U. S. N. R., now doing flying duty on the airplane carrier U. S. S. *Lexington*; Thomas L. Bulger, president of the Associated Aviation Clubs, Inc. of America, aeronautical designer and engineer; Captain C. T. Harrison, A. S. O. R. C. with years of experience in Uncle Sam's service and civil flying; Mr. Patent, the club's director; and a host of others.

After the meetings of the club, which are held weekly, the boys who have flying models ready meet on the baseball field and compete against each other for endurance flight supremacy of the organization. An official time is given to each flight and a log is kept of the flying records, which are available to members.

Many models of all types have been built by the boys and placed on exhibition. Last year at Westchester County's first model airplane meet at Ossining, one of the boys won second award for an endurance flight with his twin-pusher. This was the first model the boy ever built. In addition to its local activities the boys attend, through the courtesy of the respective managers, thea-

ters showing aviation films. The club also visited the New York Aviation Show, held in 1928. Seeing the actual planes exhibited proved to be a big incentive to the boys in their model aircraft work. One of the directors of the Home made it possible for the H. N. O. H. Model Airplane Club to visit Roosevelt Field, where the boys saw for the first time real airplanes take off, stunt and land. The boys found the visit most profitable.

A few months ago the club was presented with a new club room and workshop, which is very much larger than the old one. Because of the large size of

the workshop the working periods have been made longer and the members can devote more of their time to model building. The club's aeronautical library is open to all boys in the Home who wish to read and study the latest books and periodicals dealing with aeronautics. The library contains many volumes of aeronautical data and current aeronautical magazines.

Outdoor activities play a large part in the H. N. O. H. Model Airplane Club life, and frequent visits are made to local airports to study aviation proper.

The club's first anniversary dinner was attended by many prominent people, including lawyers, judges and men of note in the aeronautical field. The dining hall

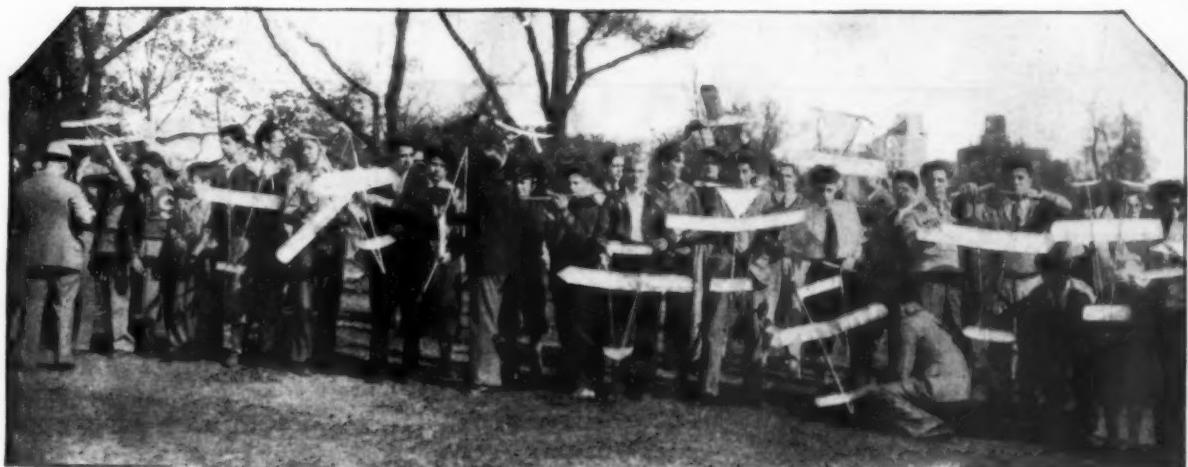
was appropriately decorated with models made by the members of the club and an educational exhibit was held for the edification of the guests present. At this banquet some of the guests were so pleased with the success of the Model Airplane Club that they donated large sums of money to the H. N. O. H., so that the fine work might be carried on without financial difficulties and with adequate instruction and equipment.



John Sullivan, who has qualified as an ace by building planes that have flown more than five minutes, and his sister, Frances Sullivan, who made a creditable showing during a Washington, D. C. tournament



The scale-model exhibition of the Central Park Air Derby



An excellent impression of the various types of models flown in the Central Park Air Derby can be gained from the above picture, which shows the endurance group line-up prior to start of the contest

The present officers of the club are: Morris Silbergberg, president; Israel Abramowitz, vice-president; Irving Romm, secretary; Frank Lerner, treasurer and David Mansner, sergeant-at-arms.

New York City Model Air Derby

A great cloud of miniature models of Falcons, Blériots, Spads, Lockheed Vegas and original airplanes hummed and buzzed over the sheep meadows of Central Park, where New York City held the third annual Model Air Derby on September 21, 1929.

Great excitement reigned at the field as the 3,500 spectators gathered around to get a glimpse of the annual model air meet. Hundreds of men and boys entered all makes and sizes of planes in the events.

Thirty-two police officers and a motor-cycle squadron of New

Y o r k ' s "finest" were in the field to keep order. Camera-men and reporters from all newspapers were on the field. The derby began with the arrival of the chief judge, Clarence Chamberlin, president of the Crescent Aircraft Company and one of the world's most popular aviation heroes. Mr. Chamberlin, assisted by other prominent judges, first chose the winners in the exhibition contest, which determined the best constructed scale-model plane regardless of the flying efficiency of the model.

The first prize, a

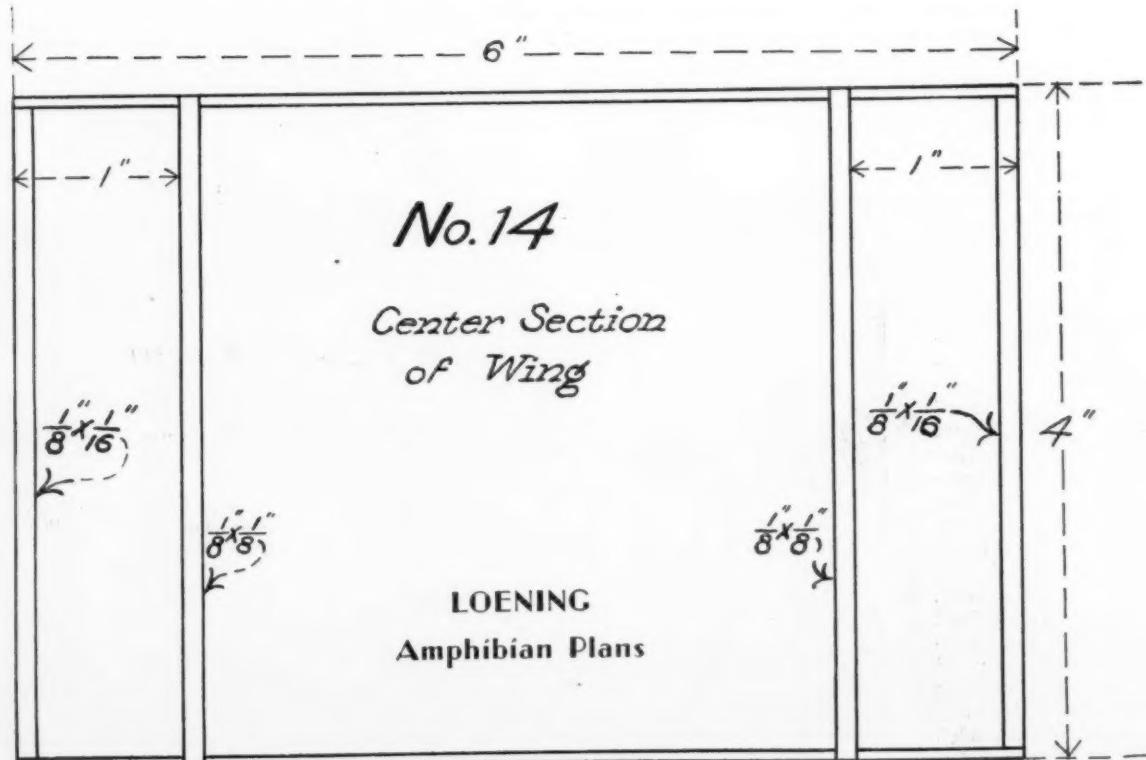
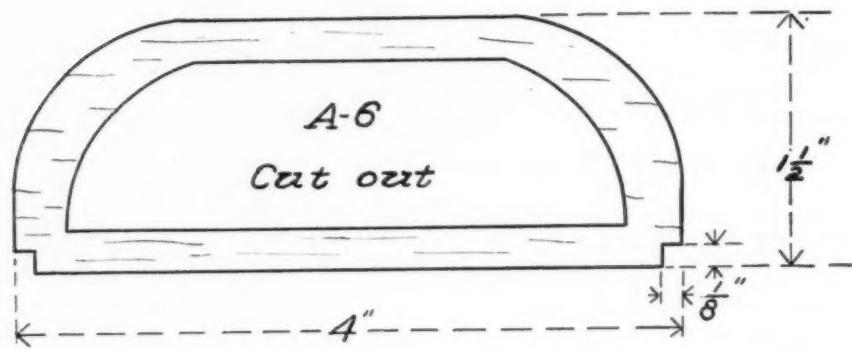
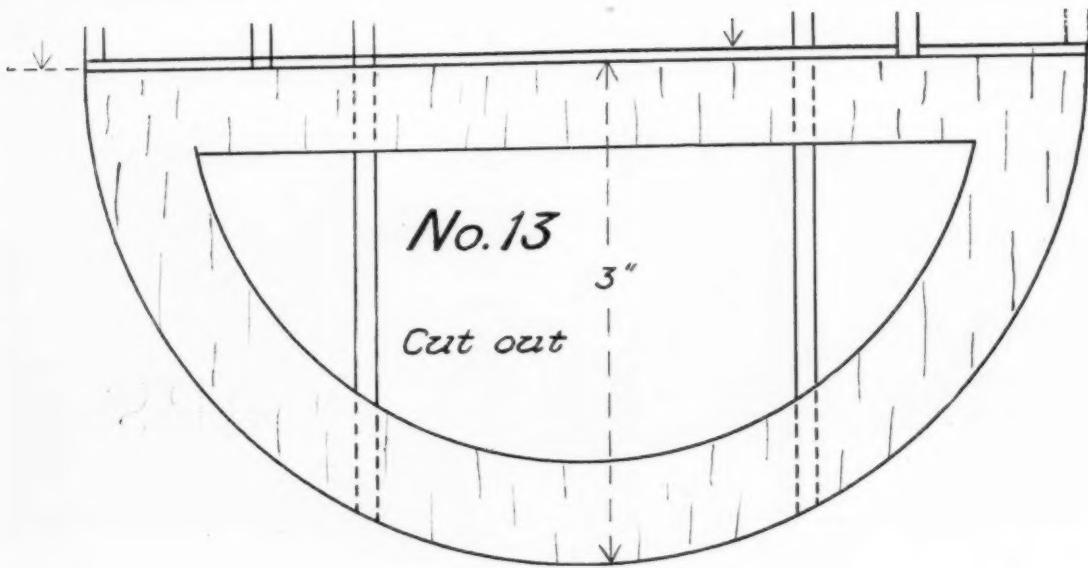
Curtiss Aviation School ground course, was donated by the Columbia Picture Company which is exhibiting "Flight", the all-air picture, at the George M. Cohan Theatre. The prize went to Donald Gilbert of 5 Charlotte St., White Plains, N. Y., for a scale-model Curtiss Hawk ship.

He is nineteen years old and is extremely interested in all phases of aviation.

Second and third prizes, consisting of medals, went to Percivale Gayli of 408 Manhattan Avenue, New York, whose entry was an English Blackburn Lincock model; and Biaggio Galdiere of 1264-83rd St., Brooklyn, for a Vought Corsair model. (Continued on page 48)

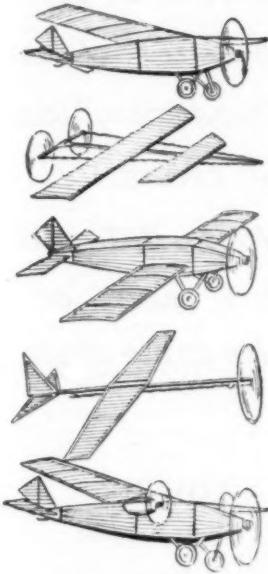


A twin pusher takes the air in the endurance contest



BOYS-LEARN TO FLY

Join the MODEL AIRPLANES CLINTON JUNIOR AVIATORS



Above are a few of the many model designs you will make under this Club plan.

A. B. Clinton, 2nd, Senior Aviator and designer of successful model aircraft for over 10 years, invites you to join with thousands of other boys whom he has helped instruct.



MODEL BUILDERS—If you really want to learn how to build all types of model airplanes, here is the greatest proposition ever offered. Join the Clinton Junior Aviators. The total membership cost to you is One Dollar (\$1.00) a year, and this is what we send you.

- 1 Twelve plans (regular price 25c each, \$3.00 total value)—one each month for 12 months—each plan different, new, advanced in design, with full instructions for making and flying. We also enclose a news sheet with valuable information for model builders, pictures, instructions, news, etc.
- 2 A year's membership card—entitling you to full club privileges and the prize opportunities offered in regular bulletins.
- 3 A Discount Sheet with 12 coupons, good for 10% discount on all material and parts purchased thru the club.
- 4 Monthly prizes of \$5 to \$100 for the best models, best flights, photos and news, securing new members, etc. Under this club plan you can build more and better models at great savings in cost.

Can you imagine any greater value or any similar plan at **any** price that helps you to really study Aviation. Send in your membership **right now** and receive by return mail Plan No. 1—Junior Aviator Special Duration Scale Model, one of the neatest designs ever offered. Easy to construct, 20" wing, built-up 14" fuselage. Stays in the air for a minute and a half or more. Fine for flying either indoors or outdoors. Very light—weighs less than 1 oz. This plane is a wonder—you will rave about it.

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It costs only \$1.00 to join. Get started right away. This is the greatest dollar value ever offered to Junior Aviators.

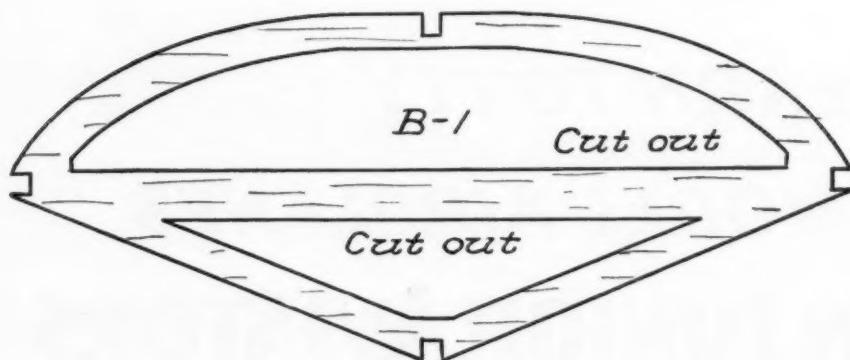
Special Coupon

Clinton Junior Aviators, c/o Clinton Toy Corp., North Haven, Conn. Dept. L1.

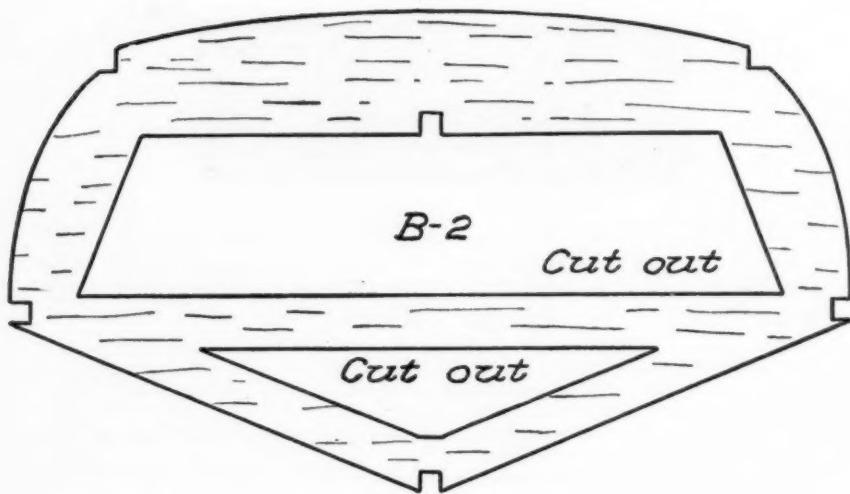
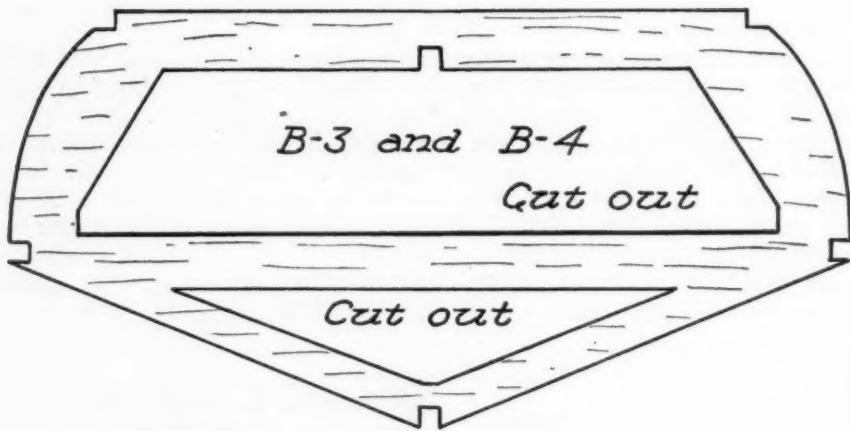
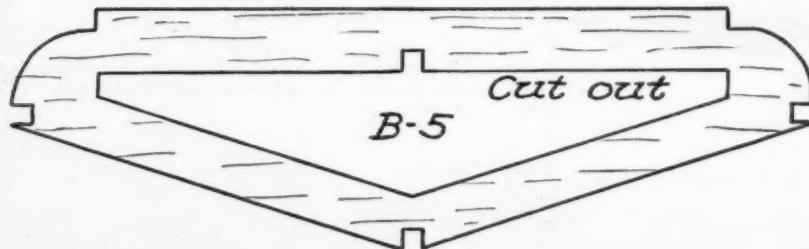
Dear Mr. Clinton:

I sure want to join your Junior Aviators Club. Here is my dollar. Put me down for a year's membership and rush me Plan No. 1 at once!

(Signed)



No. 15

**Forms***B-1, B-2, B-3**B-4, B-5, B-6**to be used in construction of float.**Note-B-3 and B-4 are of the same shape.***LOENING Amphibian Plans**

A Course in Airplane Designing

(Continued from page 10)

brother. From the time the model takes off until it lands, there is no guiding hand at the controls to compensate for wind gusts, etc. For this reason the successful model must possess inherent stability. The term "inherent stability" means just this: that, no matter what attitude the plane may be forced into while in flight, forces will be set up in the ship itself which will force it back to normal flying position.

But stability is somewhat complicated. Let us begin with the basic forces acting on the ship. These forces are: Thrust, drag, lift and weight. The thrust is a force set up by the propeller and acts in the line of the propeller shaft. It is caused by the blades of the prop acting as miniature wings as they revolve. The drag acts in a direction opposite to the thrust. It is caused by the resistance to the air flow offered by the parts of the plane; such as the wing, the tail group, the fuselage and the landing gear. The lift is caused by the wing, which creates an upward force when the air acts upon it. The weight is, of course, the actual weight of the complete airplane.

In normal flight all of these forces balance—I mean by normal flight the condition when the ship is flying at a constant speed, neither losing nor gaining altitude. That is, the thrust equals the drag, and the lift equals the weight. If either of these conditions was not true, the ship would be changing its speed or its altitude.

Now study the diagram carefully and then see how many of the following questions you can answer at the first shot.

QUESTIONS

1. Why should a model builder study simple aerodynamics?
2. Why must a model airplane have a greater degree of stability than its larger brothers?
3. What is inherent stability?
4. What are the four main forces acting on an airplane in flight?
5. When the airplane is in normal flight, what relation exists between the thrust and the drag? The lift and the weight?

Continue on the road to successful model building by watching for the designing course in the January and subsequent issues of MODEL AIRPLANE NEWS.

This is something you cannot afford to miss.

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Post-paid

A Great Construction Outfit A Sweet Flying Job

BOYS Never in your life have you seen such a wonderful buy as this new Big Mocar aluminum construction model plane! Just think—a real aluminum construction outfit—with 2½ ft. wing spread and 18 in. fuselage—and how it does fly! Many special features, cambered wing construction, the big 11½ in. ball bearing propeller, with a powerful long-running motor that carries this plane soaring and zooming for great distances. And it's strong, won't break up even after many flights.

It is a real scale model—great fun to make—wonderful to fly. It will be your pride and joy. And you can fly it, too. It is made to stand the shocks. The Big Mocar construction outfit M-200 is complete with full instructions, mounted on board with all parts marked for easy assembly, rubber-tired wheels, covering material, cement and colors. Pliers only tool necessary.

Don't let a day pass without sending for this. You won't be disappointed. It is the greatest value and finest flying model ever offered at a popular price. It's yours for only \$3.50 postpaid, if you use the coupon below right away. Model M made up ready to fly (\$5.00) or send 10c for complete catalog showing many model planes from 75c to \$5.00 (glider given with catalog).

The illustration shows the Big Mocar construction outfit as it comes to you. The names of the parts are plainly printed on the card so that you may easily identify them and all parts are securely mounted to insure delivery to you in good order.

(Right) Clarence Chamberlain says "The Mocar is a great flyer. I like the aluminum construction. It is very light and very strong."

American Model Aircraft Company
Dept. M12, New Haven, Conn.



SPECIAL COUPON

American Model Aircraft Co.,
Dept. M-12, New Haven, Conn.

I certainly want this new Big Mocar. Here is my \$3.50, send it at once to
Name.....

Check here and enclose \$5.00 for model M made up ready to fly



Model Aero Motors

6 and 8 CYLINDER

COMPRESSED AIR MOTORS

This is the fastest, smoothest, most powerful motor of its kind. It is perfected, not experimental, fool-proof. Can be unscrewed from tank, a feature.

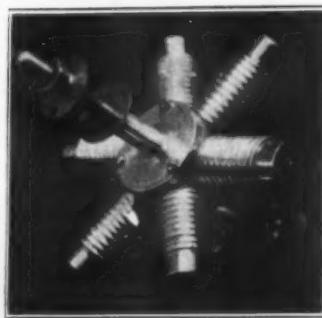
Weight 4 oz. $\frac{3}{4}$ " BORE x $\frac{5}{8}$ " stroke, 3½" wide turns, 17" prop., 1200 R.P.M. Will fly 4½ to 6 foot models. Price 6 cyl. motor ready to run, \$16.50. Price 8 cyl. motor ready to run \$24.50. Also tanks and models.

Send 10c coin for New Catalogue just out.

MINIATURE AIRCRAFT CORP.

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A Smashing Sensation The "SCARLET FLASH" MODEL CABIN PLANE

What This Plane Has Done

Here's a remarkable new model plane, The SCARLET FLASH. Duration record ninety seconds in air (sworn statements available). Will rise off ground. Will not nose dive, stall or spin if properly adjusted. Has flown on one winding for 350 feet. Altitude record 50 feet. Complete model weighs less than one ounce, and is the only scale type model of its exact kind now available. An utterly remarkable model plane.



Actual Unretouched Photograph

Above is an actual unretouched photograph of The SCARLET FLASH when assembled. Comes to you as a construction set with all necessary parts and materials and "easy-to-follow" directions. Be the first in your town to build and fly the sensational SCARLET FLASH. It is a perfect

gem of design—the slickest thing you ever saw. Will out-perform planes costing many times more. You may have the complete construction set with which to build this wonderful plane **FREE!**

See Opposite Page →

RECORD BREAKING EXPENSIVE

The "Scarlet Flash" AMAZING model plane! Brand New! R.O.G. • 350 feet • 90 seconds

The Magazine of THRILLS!

THE OPEN ROAD FOR BOYS MAGAZINE is a 50 page monthly magazine for boys just crammed with thrilling, breath-taking stories that will hold you spell-bound. Wonderful air stories and articles on aviation. Tense stories of high adventure, deep mystery and suspense. Wonderful departments and articles and contests galore with prizes for all.

Daring Stories of Aviation

We are now publishing some of the most absorbing stories of aviation ever printed in a boy's magazine—stories by foremost writers of their kind—stories that you will want to read over and over again—just the kind of stories you've been looking for!

"THE STREET OF DREADFUL SILENCE"

Best of all, we are now starting to publish "The Street of Dreadful Silence"—the most breath-taking, most absorbing mystery story for boys in ten years. A new serial mystery smash. This is a story that every red-blooded boy will go wild about. Written by Trentwell Mason White, whose books and stories are the talk of boys everywhere—it carries a punch in every sentence—a story that you would not miss for anything in the world. This alone, published in book form would cost \$2.50—yet you may have it, with scores of other good stories, serials, articles—12 whole issues—for only \$1.

BIG SPECIAL OFFER

The regular subscription price to THE OPEN ROAD FOR BOYS MAGAZINE alone is \$1 a year, half that of other boys' magazines. Fill out and send the coupon on this page, together with only \$1 and we will send you THE OPEN ROAD FOR BOYS MAGAZINE for a whole year—and rush THE SCARLET FLASH model plane construction set right out to you. This is a great offer. Grab it yourself—or send this wonderful combination to your friends as a Christmas gift. But hurry! Send coupon today!

Both For \$1



Canadian postage
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When you build model planes and gliders, use Balsa Wood

Commercial builders make their planes from Balsa Wood—it is the lightest wood known, yet weight for weight strong as spruce. Balsa Wood is the best wood to make Scale Models. We have Balsa Wood pieces cut in special sizes for the builder of model planes and gliders. Prices as below.

Prices Postpaid

Length	Width	Thickness	
36"	6"	2"	\$1.25
36"	6"	3"	1.75
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Prices on other sizes furnished on request

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245 11th St.

Write for our free booklet
on model construction

The Macfadden Aviation Advisory Board

(Continued from page 34)

fighter, 180 h.p. B.R. engine. B.A.T "Bantam", RK 23, small, single-seater fighter, A.B.C. 200 h.p. "Wasp" engine

B.A.T. "Basilisk" single-seater fighter, 320 h.p. A.B.C. "Dragonfly" engine

B.A.T. "Baboon", two-seater biplane (dual control) F.K.24, for training purposes, 170 h.p. A.B.C. "Wasp" engine

Beardmore biplane WBI, two-seater, for bombing, 240 h.p. Sunbeam engine or 230 h.p. Beardmore Adriatic

Beardmore WBIA, bomber, Beardmore Atlantic 500 h.p. engine

Beardmore WBII fighter, Hispano-Suiza, 200 h.p. engine

Beardmore WBIIA fighter and reconnaissance, Beardmore Adriatic 230 h.p. engine

Beardmore WBIII biplane, ship's scout, Clerget or Le Rhone 80 h.p. engine

Beardmore WBIV biplane, ship's scout, Hispano-Suiza 200 h.p. engine

Beardmore WBV biplane, ship's scout, Hispano-Suiza 200 h.p. engine

Beardmore torpedo carrier WBVI, 350 h.p. Rolls-Royce Eagle engine, single-seater

Blackburn "Kangaroo", long range bomber, 2-250 h.p. Falcon Rolls-Royce engines

Blackburn "Baby" seaplane, fighting scout, 130 h.p. Clerget engine

Blackburn three-seater seaplane, long range bomber, Falcon-Rolls 2-250 h.p. engines

Blackburn "Blackbird" tractor biplane, torpedo carrier for use from ship or land, 350 h.p. "Eagle" Rolls-Royce engine.

Boulton & Paul "Bobolink", a small, single seater fighter, scout biplane, 230 h.p. B.R. 2 engine

Boulton & Paul "Bourges" twin-engined biplane bomber-fighter, 2-300 h.p. A.B.C. "Dragonfly" engines

Bristol Scout type D, commonly known as the Bristol "Bullet", single-seater biplane for fighting and reconnaissance, 80 h.p. Le Rhone engine

Bristol Scout type F1, single-seater biplane, for fighting and reconnaissance, 200 h.p. Sunbeam "Arab" engine

Bristol monoplane, single-seater fighter, 110 h.p. Le Rhone engine

Bristol F.213, biplane (fighter), Rolls-Royce "Falcon" engine

Bristol all-metal M.R.I biplane, for fighting and reconnaissance, 200 h.p. Sunbeam "Arab" engine

Bristol triplane "Braemai" Mark II, four-engined bomber or passenger carrier, 4 Liberty engines, 1640 h.p. total

de Bolotoff biplane, two-seater, 200 h.p. Curtis engine

Fairey F 2, twin-engine land biplane (folding wings), 2-190 h.p. Rolls-Royce engines

Fairey Campania types F16, F17

and F22, patrol seaplanes Fairey type 3, sea scout seaplane, 260 h.p. "Sunbeam" motor

And now to answer some questions.

Dear Sirs:

I heard of a ground loop and I did not know what it was. Would you please tell me? Thank you.

ARTHUR BREITENSTEIN,
812 Ardmore Ave.,
Akron, O.

Answer:

A ground loop may best be described as an airplane swinging completely around on its horizontal axis on the ground, the leading edge of the plane forming the radius of the circle described. Sometimes this maneuver is done purposely when landing on a small field to avoid crashing into a fence, clump of trees, or any other obstacle.

Dear Sirs:

What is a good way of covering a model airplane? I never make mine a neat job. Most of the time the paper comes off. Is there any good way you know of?

Respectfully yours,
GERALD WALSH,
251 Cuff St.,
Dunmore, Pa.

Answer:

We have found that Japanese tissue is as good as anything one can use and call your attention to the fact that the paper should be drawn as tightly as possible, smoothing it back from the leading edge to the trailing edge of the wing. It is often a good thing to cover the leading edge with David's paste, fixing the tissue to the leading edge and then allowing it to dry thoroughly before pasting the tissue down to the trailing edge. If you have struts in your wings, apply paste to them also so that these may act as supports not only for the wing but also for the tissue. Incidentally, where the wing has no shaped ribs and therefore has only one top covering of tissue, unless it is absolutely essential, do not apply dope as this leads to warping of the wing when the dope dries.

Dear Sirs:

I am making the Bernard monoplane. I would like to know the color of the plane. I would like to know if there are any numbers on it and where they are.

Yours truly,
CURTIS WOODWARD,
43 Freeland St.,
Mattapan, Mass.

Answer:

The Bernard monoplane is yellow in color. From the junction of the leading edge of the wing and fuselage to the wing-tip trailing edge on

either side is a red, white, and blue band—the French tri-color; also from the point where the trailing edge and fuselage meet to the bottom of the fuselage at a point midway under the elevator is another band of the tri-color.

The number 9422 designated by the Aeronautical Branch of the Department of Commerce was assigned to the *Yellow Bird* and was painted in black letters on top of the right wing, near the tip, and under the bottom left wing, near the tip; also on the rudder above the French letters and numbers appears "Bernard-191"—Bernard signifying the manufacturer's name and 191 the manufacturer's serial number of the machine.

Dear Sirs:

You have been asking for questions for the Advisory Board; perhaps in some of these letters you have found requests of boys who wish to write on the subject of aviation to one another. If you have any, send me their addresses and names and I shall do my best to answer their letters.

I also have a question:

Why were pontoons used instead of wheels in Byrd's Antarctic Expedition and what is the lifting power of the tri-motor Ford plane he took with him?

Yours truly,
NESTOR NELSON,
502 Huron Ave.,
Cambridge, Mass.

Answer:

We are in receipt of your extremely kind offer to correspond with others of our readers and for this purpose we are publishing your letter so that those of our readers who care to correspond with you will be able to do so directly.

In answer to your question concerning Byrd and his arctic plane, we would point out that it is not fitted with pontoons but with skids for landing on snow and ice.

The data you request concerning the Ford tri-motor plane is as follows:

Weight, empty—6,100 lbs.

Disposal load—3,900 lbs.

Weight loaded—10,000 lbs.

Wing loading—12.7 lbs. per square foot.

Power load—15.5 lbs. per horsepower.

Maximum speed—114 miles per hour.

Cruising speed—95 miles per hour.

Dear Sirs:

Does one have to have a college education to join the Army Air Corps?

How old does one have to be to become a pilot in the Army Air Corps?

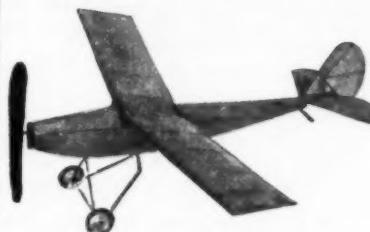
For how long does one have to sign up to join the Air Corps?

Yours very truly,
EDWARD GOLDSTEIN
3 Lockwood St.,
Worcester, Mass.

Answer:

An applicant as flying cadet in the U. S. Air Corps must present

GUARANTEED



TO
**FLY
250 FT.**

**GET THIS WONDER
PLANE
FLYING GLORY**

5 AMAZING NEW FEATURES—ONLY \$3.75

Boys—until you've seen "Flying Glory" perform, you don't really know model airplanes. We guarantee 250 ft. flights, but we have records as high as 400. Watch "Flying Glory" take off from the ground or your hands, zoom up and then glide to a perfect three point landing. Strong? Fly it and see. It'll never break. Specially made to stand shocks. Carisi, designer of Levine's Columbia, uses "Flying Glory" to test his new ideas. An hour after you get your kit you'll fly the model. Simplest and yet most interesting plane to construct known. Read these specifications and compare.

**GET
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FLYING GLORY
FOR
CHRISTMAS
AND
KNOW WHAT A
MODEL
REALLY CAN BE**

SIZE AND WEIGHT—wing spread 27"; weight $2\frac{1}{2}$ oz. Lightest cabin model obtainable.

CONVERTIBLE—can be made into land or sea plane at will. Knockdown the model in 2 minutes and set up in the same time. Wings, rudder and stabilizer detachable.

ADJUSTABLE—there is no motor stick in "Flying Glory." You will have no trouble with changing your motor.

SPEED OR ENDURANCE—by pulling nose out from plane before you begin to wind up, you can get great endurance. Springs at back and front give steady, lasting power.

NO TOOLS—all you need to construct this plane is a screw driver, a drill and a piece of stick for ambrido. No "cut and dried" parts all stamped, yet everything is ready. You can't go wrong.

RUSH COUPON

FILL THIS ORDER TODAY. I WANT ACTION.

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|--|--------|
| <input type="checkbox"/> FLYING GLORY—Construction set complete..... | \$3.75 |
| <input type="checkbox"/> FLYING GLORY—Made up, ready to fly..... | 9.00 |
| <input type="checkbox"/> Catalogue, 5c | |

Signed.....

CRESCENT MODEL AIRCRAFT

1805-1807 Benson Ave., Brooklyn, N. Y.

Featherweight Models

Our idea is to do our utmost to please model airplane builders and therefore we have prepared a circular showing model supplies at the lowest prices obtainable.

MOISKITO FLYER

This model has flown indoors for over 5 minutes, the best and sturdiest indoor flying model we have ever made. Kit includes: Bantwood propeller, propeller blank, wire parts formed, full size plans and necessary instructions sheet—only \$1.25 postage. Kit less Bantwood propeller \$1.00, postage.

F. B. MODEL AIRPLANE CO.
1527 St. John's Place, Brooklyn, N. Y.

Send stamp for Circular

FLYING KEYSTONE-LOENING

3 Foot Model that rises from land or water, and that has adjustable landing gear and wings can be made from our special blueprints, size 5 feet by 3 feet, and divided into three sections. Complete constructional blueprint set, postage prepaid—\$1.50

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MOULDS
For Making Toy Soldiers.
Indians, Cowboys, Animals etc.

With one Mould you can make many HUNDREDS OF CASTINGS, Whole Armies. Outfits, including material for casting, enamel paints and everything complete, \$4.50. Easy enough for any boy to make and great fun for grown-ups. Sport for the whole family.
Write for illustrated catalog and patterns you can make.

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How About Your Helicopter, Ornithopter

or other Airplane patents and ideas?
Are they practical?

THE WIND TUNNEL will give you the answer. Complete tests made. Scientific flying models constructed. Low rates. For information write

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The
CLEVELAND



313 TRACTOR

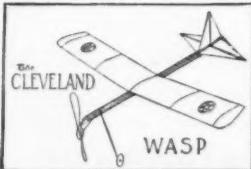
BOY! Could you wish to own a better flying model than this neat 3 foot tractor? It climbs to 150 feet and flies from 60 to 240 seconds. Just think what Christmas morning will be like with a kit to build this big model, in your possession!

Tell the folks you'd like to own one. Let them surprise you for the small cost of one dollar fifty cents. We'll ship it immediately via express, charges "collect."

Perhaps you will prefer the attractive little 14 inch "Cleveland Wasp" kit. This indoor model has 120 seconds duration to its credit and it is capable of doing better.

After you've built it you'll get a thrill to see how well it flies every time you release the propeller and let it hop-off. And then, those 3-point landings—well—wait till you build your Cleveland Wasp, then you can tell us how it performs. The complete kit will be mailed postpaid anywhere in the U. S. or Canada for 80 cents.

We do not accept stamps or C.O.D. orders.



We have other models and supplies too! If you wish to be placed on the mailing list for our new 16 page catalog and additions later, send a dime with your name and address plainly written.

Dealers list 35c, returnable on your first \$5.00 order—or write us on your business letterhead. "Cleveland Blue Diamond" models and supplies are in demand.

Cleveland Model & Supply Co.
MODEL ENGINEERS
1866N West 57th Street,
Cleveland, Ohio
High Quality—Prompt Service

documentary evidence of his graduation from, or satisfactory completion of two years' work at a recognized college or university. If such evidence cannot be furnished the examining board, the educational examination will be given.

The ages given in the U. S. Gov-

ernment regulations are not less than twenty and not older than twenty-seven. These regulations also state that "the course of instruction continues for one year" at the end of which a successful cadet is rated as an airplane pilot and is granted a commission as Second Lieutenant.

The American Sky Cadets

(Continued from page 39)

The second contest, a flight for endurance record, was won by Robert Meagher of 600 West 176th St., whose twin-pusher model stayed in the air until out of sight. While still visible through field glasses, his plane had been going for two minutes and forty-nine seconds at rapid speed.

Second prize in this contest went to Francis X. Leonard of 36 Jefferson place, Bronx, N. Y. Mr. Leonard's plane, also a pusher, stayed in the air for one minute and forty-nine seconds, being picked up by a motorcycle officer who trailed it several blocks. Third prize was won by Arthur Boland of 914 Hancock St., Brooklyn, N. Y., with a flight of one minute and thirty seconds.

The final race, a distance meet, was also won by Arthur Boland, whose pusher flew 390 yards. Second and third in this race were Joseph Kovel of 404 Bristol St., Brooklyn and Irving Woolf of 557

West 187th St.

A special gold medal was given to Fiora Califano of 146 Baltic St., Brooklyn, N. Y. This prize was given for originality in design. It was an all-marble plane inlaid with mother-of-pearl and rhinestones. It was said by Clarence Chamberlin to be a unique model, though it was not built to scale and could not fly.

The judges, in addition to Clarence Chamberlin, were Lawrence Shaw of the Junior Aviation Club, who directed the meet; Edwin T. Hamilton of the American Sky Cadets; Jack F. Reilly, of the Crescent Aircraft Corporation; T. Bulger, of the American Sky Cadets; Jack V. Gregory; George Hasler Johnston; and C. A. Boggs of the Bell Laboratories, who was the timer.

Commissioner of Parks, Walter R. Herrick and Supervisor of Recreation John V. Mulholland were members of the official city committee.

Join the American Sky Cadets

Here is the opportunity you have been looking for!

If you are interested in building and flying model airplanes—if you wish to learn airplane designing—if you wish to grow up to be a leader in this great industry of aviation, then join the AMERICAN SKY CADETS and they will do the rest.

WE SHOW YOU HOW!

If you have never built or flown a model airplane, you've missed one of the greatest sports known to boys. If you have, you will want to join the SKY CADETS because a membership in this great organization will bring benefits to you, as a member, which are beyond your wildest dreams.

Do you need advice? Do you lack the time and experience to perfect some of your inventive ideas? Would you like to participate in city, state and international meets? Would you like to wear a beautiful pair of wings like army aviators do; have a beautiful membership certificate and a membership card to prove you are a member?

All these benefits are yours for less than the price of the magazine alone. Fill out the coupon below. Enclose \$1.50 and mail it to the Administrator, AMERICAN SKY CADETS, 1926 Broadway, New York City.

Dear Administrator:

You bet I want to be an AMERICAN SKY CADET, because I'm sure air-minded! Here's my \$1.50.

Name..... Age.....

Address..... City..... State.....

When I have obtained 5 more members please make me a Flight Commander and send me my gold wings when I have returned my silver ones.

A glance at his altimeter showed almost 3,000 feet and he was climbing fast. The black plane of the bandits was circling below him to the right, but something told him that they would be unable to get into position to shoot effectively if he could keep climbing at his present rate.

Suddenly he realized that the cold was growing intense. Then it occurred to him that he need not climb steadily. He could level off and start climbing again when the black plane began to get in position to shoot. He began to work along this idea. In the next ten minutes the black plane made two attempts to shoot him down. Both attempts failed, but two bullets went through the fuselage just ahead of the rudder.

The altimeter told Dale that the bandits were driving him rapidly toward the ceiling. It now read almost 6,000 feet. The bandit craft was swinging for another attempt. Again Dale grasped the blood-smeared stick and put the plane into a climb. Again the bandit gun spat its venom and again Dale realized that he was unhurt; but he had felt the impact of several bullets as they tore through the plane somewhere behind him.

TEARS of anger and disappointment ran down Dale's cheeks as he looked at the black plane again. It was going to pass below and in front of him once more. If he only had a gun! Then a thought seared his brain and his lips tightened with determination. Those bandits had spoiled his trip anyhow. Their next volley might kill him. If he must die, he would take the bandits with him. They would not rob him after he was dead. His hand tightened on the bloody stick. The black buzzard was just about in position for his purpose. "Eagle Jim's" son shoved down the stick and sent the mail plane in a murderous nose-dive straight at the bandit craft!

"Goodby, Mother—Dad," muttered Dale through lips numb with cold as he saw the black bulk of the bandit plane rushing to meet him. In another moment he would be hurtling to his death, but he would have company. Mother and Dad could be proud. "Eagle Jim's" son wouldn't be robbed!

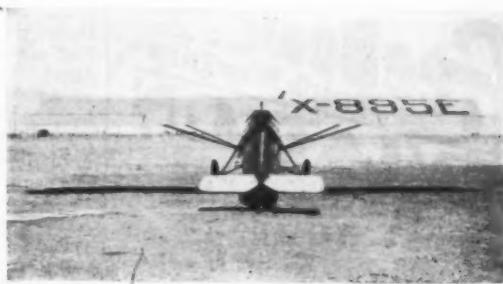
The masked faces of the bandits turned upward in time to see the start of that crazy dive, but too late for the pilot to avoid it entirely. Down went the bandit pilot's stick and the black craft, too, dived—but it was a dive for safety, not revenge.

Down like a rock shot the roaring mail plane. Dale felt a shiver go through the ship and opened his eyes. The black ship was gone. He had missed!

For a moment he was conscious only of keen disappointment. Then the roar in his ears warned him of the terrific speed with which he was plunging toward the earth in the

WIN FREE

WIN THIS AIRPLANE



Here's a wonderful chance to win absolutely free a real solo plane, knocked down, of a nationally famous make and complete set of blue prints for assembling—an airplane that will fly and carry you through the air at the rate of

EIGHTY MILES AN HOUR

All you need to do is purchase a set of scale plans for \$1.00 and build a model to be entered in our model airplane contest.

Just think! One Dollar and a few hours time may win you the airplane. Better write at once, enclosing money order or dollar bill so you will have ample time to perfect your model.

Blue prints and full details regarding the contest will be sent you upon receipt of One Dollar.

NORAN MODEL CONTEST

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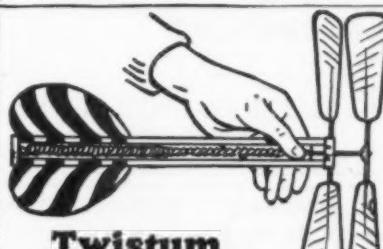
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reached out to help the boy flyer to the ground.

"Here's the mail," said Dale, smiling feebly. "Dad got hurt, so I brought it."

Hurried into a dressing-room, Dale was soon under a doctor's care. The plane was trundled off the field and the escort plane that had gone to Dale's rescue landed. The two pilots who climbed out of it hastened to tell a story that was soon rushing over the wire to appear in the newspapers of Dale's home city and throughout the land.

"What happened to the bandits?" asked Dale when he learned who the pilots were.

"You tore their tail off with your landing-gear when you made that dive at them," answered one of the rescue pilots. "They fell about six thousand feet like a rock. They're finished. We thought you were, too. Boy, you sure did a pretty job of bringing her out of that plunge."

"Will you tell Dad I handled her all right?" asked Dale.

"You bet we will," answered both pilots together.

DALE went home by plane early the next morning. Thousands of persons swarmed to the field to see him land. News cameras clicked as the young flyer's mother, tears streaming down her face, took Dale into her arms.

"How's Dad?" asked Dale.

"He's waiting at the hospital for us to come," answered his mother, leading the way to a waiting car.

There was a frown on the stern face of "Eagle Jim" as Dale walked to the bedside. "Eagle Jim" had read in the morning paper complete details of his son's eventful and miraculous flight. His heart was swelling with pride, but the boy needed handling.

"Hello, Son," said "Eagle Jim" quietly. "I'm not going to get tough about this mess, but I want you to promise that you won't fly again until you are eighteen. If you promise me that, I'll promise to quit as soon as you are a full-fledged pilot. Two of us in the family are more than your mother can endure."

"I promise, Dad," said Dale.

The news cameras clicked again as "Eagle Jim's" kid shook hands with his smiling Dad.

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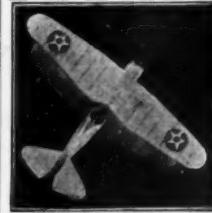


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The Golden Swamp

(Continued from page 33)

"They saw something under that arched mangrove stuff!" Squint said suddenly. "That's why they headed in there! But what did they see?"

Fred Lane was standing up in the rear cockpit, his eyes searching the black streams cutting like dark ribbons through the mangrove. Here and there was a greener streaking of color, saw-grass stabbing up from the water. These streakings, he guessed, were glades—solid ground above the water level. There were few of them in comparison to the mangrove growth above the black, twisting roots.

"We've got to get aboard that boat, Fred!"

SQUINT spoke through the phones in a determined tone. "The boys may be aboard her—hurt. They must have been near here. Those shots—"

He stopped abruptly. Above the clatter of the De Haviland's exhausts he had detected a sharper sound.

"What was that?" he cried out. " Didn't you—"

"I heard it!" Fred Lane's voice was sharp. "But I can't see any smoke—not a puff of it. It was shooting, Squint!"

Brent Faber felt his body grow hot. Dave Brown and the others, Lew Collins and Bert Kane, were somewhere in the swamp and in trouble. And he and Fred were not in a position to give them any direct aid.

"Look thoroughly, Fred!" he begged. "Can't you see any sign of them?"

"Not a sign!" Fred's voice was tortured. "I can't understand it, Squint, unless—" he hesitated and then finished—"That's it, Squint! I've got it! They're under cover of that mangrove stuff, somewhere, and lost! We'd never be able to see down through that. And the rifles wouldn't make enough smoke to show!"

Squint nodded his head violently.

"You may be right, Fred," he cried. "Well, that means just one thing. We'll get up in the sky again, mark the spot out as well as we can, try to place the streams that lead here from that sandy stretch and then—"

"We'll hit the sand again and use the dugout to get back!" Fred interrupted. "That's the stuff!"

"It's the best bet," Squint admitted. "But we've got to be careful. If they can get lost within a mile or so of the *Betty G* well, we can get lost, too."

He was climbing the DeHaviland again. At 3,000 he leveled off and they both tried to memorize, to fix in their minds, the position of the *Betty G* and the streams that would lead them to it. There were green walls, seeming to end abruptly many of the shortest passages of black water. And yet the white ribbon of sand seemed tantalizingly near to the slanted craft.

The gulf was green-blue and not more than a dozen miles distant, so it seemed. But in reality it was much farther to the westward. Both flyers knew that.

For perhaps ten minutes they stayed in the air, Fred making a sketch of the black streams; Squint trying to note any break in the monotony of the swamp, anything that could be used as a landmark when they came back in the dugout.

THEN they glided toward the sand strip again, toward the spot on which they had once before made a successful landing. Fred kept his eyes on the mangrove below, but saw no movement other than the sudden flight of startled pelican and other smaller fowl.

"The dugout's still there, any way," Squint muttered as he cut the engine for the glide after leveling off and banking around above the white strip. "We'll reach them yet, Fred!"

The DeHaviland was diving. But

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Squint saw that this time they were going to overshoot the sand strip. He gave the ship the gun and leveled her off, then banked around.

"Take it easy!" Fred warned, "We don't want to crash now when we're hot on the trail."

Squint circled far back, then dived the plane again. This time he brought her down nicely. The landing was a perfect three-pointer, tail skid and wheels striking the sand simultaneously. He held the stick back again until the ship had rolled forward to a sluggish stop.

"We'd better get water and food out of the plane and into the dugout," said Squint. "It won't take very long, and we'll need—"

Has he followed the direction of Squint's wide eyes. Through the rigging of the DeHaviland they saw him—a Seminole, stripped to the waist, standing beside the dugout, a rifle gripped in his hands!

He was straight and stockily built; his face was set in a grim frown. Motionless he stood, his eyes upon the ship. Fred stepped suddenly within his vision, followed by Squint.

Swiftly the Indian raised his rifle and leveled it toward them. His eyes narrowed until they were little slits. Then he spoke.

"She mine!" he stated hoarsely and moved his eyes toward the dugout, then back to meet theirs again. "She mine—you take!"

There was a silence. Fred and Squint stood tense, waiting. They could think of nothing to say. Here was the owner of the dugout and he was in a nasty humor. It was evident that he believed they had stolen his craft. The manner in which he held the rifle, the expression in his eyes, the accusing tone of his husky voice, all showed them that.

If his anger were to get beyond his control, if he should shoot at the DeHaviland, they might never be able to get into the air with her again. But on the other hand, if they told him the truth—

It was Squint who broke the silence. He spoke in a clear tone.

"I can explain about your canoe—and we hadn't any idea of stealing—"

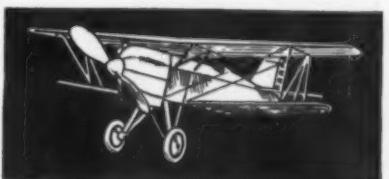
The Seminole's grunt of disgust stopped him. The Indian made a little motion with the rifle, but did not lower it.

"Me no savvy!" he stated grimly. "She mine—you take!"

Squint, his face set grimly, tried again. This time he spoke slowly, simply. The Seminole still held the rifle ready for instant action. His face was expressionless as Squint spoke.

Do Fred and Squint attain their ambition? Is the Seminole a crafty trickster? Further thrilling adventures of these two friends to rescue their buddies lost in the Everglades are concluded in our next issue.

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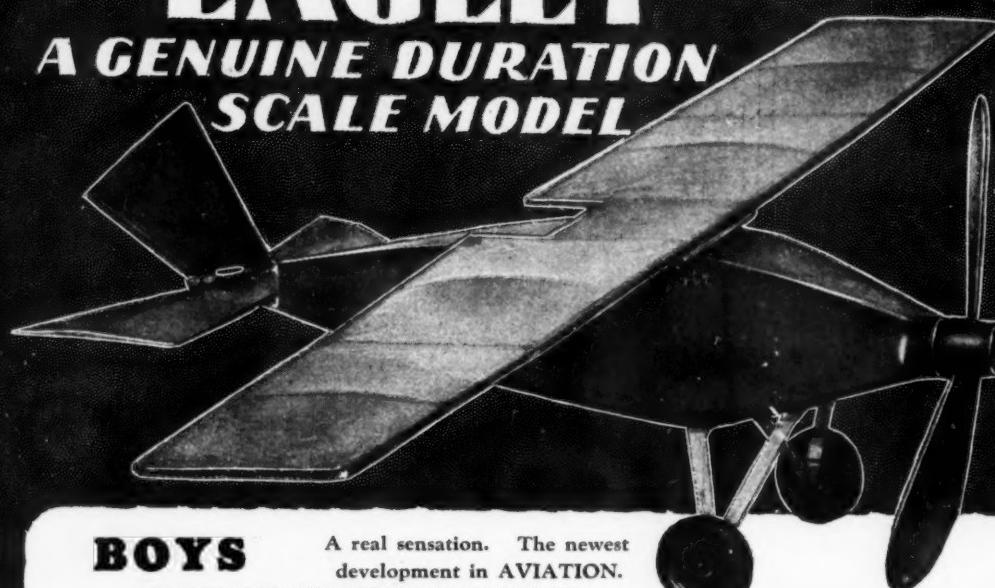
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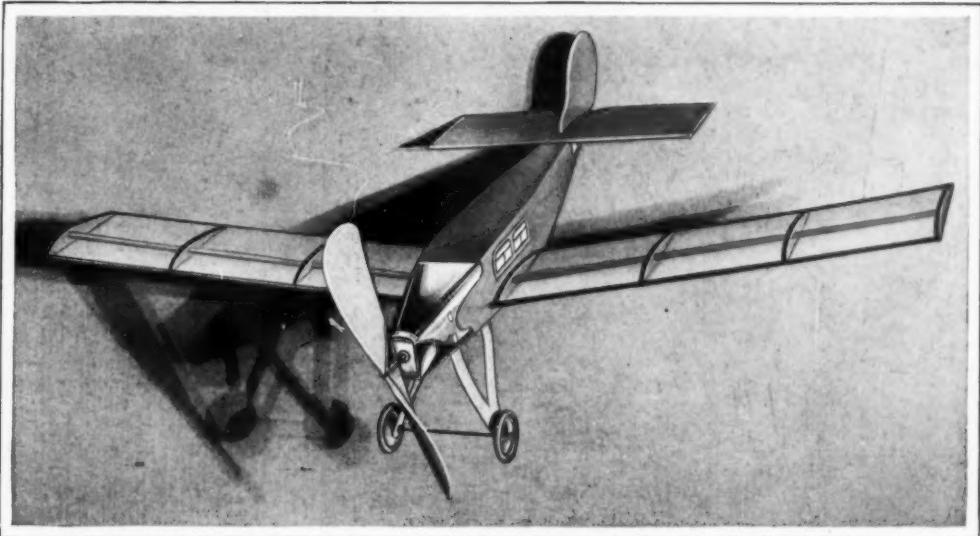
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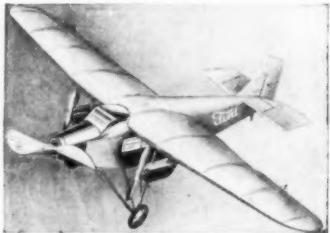
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Among the models described are models for indoor and outdoor flying, including tractor and pusher airplanes and seaplanes, scale models for exhibition purposes, gliders, and balloons. Included also are accessories such as winders, carrying boxes, repair kits, etc. This book also tells how to make propellers and other wooden parts, metal fittings, compressed air engines, the best way to attach paper and cloth wing coverings, gives complete lists of all the materials and tools needed, and in every other way anticipates and answers the questions that puzzle model builders.

The Official Book

"Building and Flying Model Aircraft" is the official book of the Playground and Recreation Association of America which conducts the annual National Playground Miniature Aircraft Tournament. This Tournament is sponsored by such leaders in aviation as Orville Wright, Chairman of the Tournament Committee; Colonel Lindbergh, Associate Chairman; Commander Byrd, Henry Ford, Porter Adams, Harry Guggenheim, Amelia Earhart and Clifford B. Harmon.

Money-Back Guarantee

IT is impossible to describe such a book as this adequately within limited space. You need to see a copy to appreciate it. Send us \$2.45 (\$2.25 plus 20 cents for shipping) and we will mail you a copy. Look it over—if you are not delighted, if you do not find that it exceeds your best expectations, send it back within five days after you receive it and we'll cheerfully refund your money.

Chassis Models

"Rise off Ground" models—Making wheels—Struts and axles—Placing the front wheels—Launching an H. O. G. model—"Rise off Water" models—The construction of boats—Suction—Models for boats—Types of boats—Other H. O. G. models—Launching.

A Tractor Model for Indoor Flying

Types for indoor flying—Material required—Making the fuselage and empennage—The wing—The propeller—Assembling and flying—Adjusting the rudder.

Scale Models

Three types—Making a fuselage scale model—Flying and exhibiting scale models—Giantus's scale model—Other scale models.

A Model of the "Spirit of St. Louis"

The fuselage—Fuselage construction—The empennage—The wing—The chassis—Completion and flying.

Designing Your Own Models—and Building Them

Supporting surface—Wing theory—Making a graph—Balance of stability—Control surfaces—Fuselage—Power—The "Rotoplane".

Model Balloons

Montgolfier's balloon—Making a "Montgolfiere"—Making dirigible model.

How to Make a Compressed Air Engine

Simple tools required—Materials—Making the tank—A three-cylinder compressed air engine—Compressed air power model.

The Uses of Model Aircraft

Instructions are made clear and easy to follow by large drawings showing every detail of model construction. Those reproduced below are, of course, greatly reduced in size.

